

THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

VOL. LXXIV. NEW YORK, SATURDAY, FEBRUARY 25, 1899.

No. 8.

ORIGINAL ARTICLES.

THE PROBLEM OF TYPHOID FEVER IN THE UNITED STATES.¹

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WHAT I am about to say on the subject of typhoid fever may appear to many of you trite and stale; and so, indeed it is, but under the circumstances the very staleness is a warrant for repetition; the triteness makes earnest reiteration a necessity. Nor do I forget that only two years ago a most interesting discussion on typhoid fever was held under the auspices of this society, a discussion which brought out many important practical points. Since then the country has had a very bitter lesson—not a more bitter one than it has had year by year as each autumn recurs, but the method of application coming as a sad conclusion to a brilliant military victory aroused a degree of public feeling which may be taken as an augury of hope.

For three generations the physicians of the country have been studying the problems of the continued autumnal fever. No other disease has possessed such a perennial interest; of no other acute disease can we read so full a history from American sources alone. With no other disease are associated the names of men still honored as our great leaders. The physicians of the first generation, to 1830, lived in a period of transition, when old theoretic conceptions were giving way to proper methods of observation. It is particularly interesting to see typhoid fever as depicted by one of the best of them, by one who in thirty-five years practised medicine extensively in every New England State but Rhode Island. I reread at intervals Nathan Smith's "Practical Essay on Typhous Fever," published in 1824, each time with increasing respect for his sagacity. There is more strong sane sense in his booklet of eighty-five pages than in anything that had appeared on "the slow nervous fever" since Huxham. It is most refreshing to turn from contemporary treatises on fever in English, French, and German to this clinical masterpiece. Happy the patients who fell into the hands of the old founder of Dartmouth Medical School and the first Professor of Medicine at Yale! With but little modification his section on

treatment might be transferred to one of our year-books as the freshest and the best.

The men of the second generation did notable work in bringing new methods of observation and in clearly outlining the differences between typhus and typhoid fever. They came to the problem splendidly equipped, inspired by their great teacher, Louis, whose practical mind appealed with peculiar force to the young Americans who studied with him between 1828 and 1845. Among them, Elisha Bartlett, James Jackson, Jr., W. W. Gerhard, George B. Shattuck, and Alfred Stillé were chiefly instrumental in promoting in this country the study of fever. To appreciate their position one has but to read W. W. Gerhard's masterly contributions, and Bartlett on "Typhus and Typhoid Fevers," the first edition of which was published in 1842, a treatise which might be put into the hands of a student to-day for the main features of the morbid anatomy and symptoms of these diseases. The contrast between the modern stand taken at that date by leaders of medical thought in this country and in Europe, particularly in England, is shown by the fact that Sir William Jenner, recently dead, had to attack the problem anew in 1849-50, before English physicians could be convinced of the essential distinctions between typhoid and typhus fever. In acknowledging the work of others he particularly mentions the names of Gerhard, Shattuck, and Bartlett as men who had already done what he was about to attempt. And I should like to remind you that one of the best contributions to the subject, Austin Flint's "Clinical Reports on Continued Fever" was the outcome of a committee appointed by this society nearly fifty years ago.

I shall not allude to the labors of the men of our own generation. The care and zeal with which typhoid fever has been studied during the past thirty years by the physicians of this country has been beyond all praise. I wish to emphasize as strongly as it is possible to do in words, that we as a profession have been persistently alive to its importance. This I feel is important to affirm as I heard the suggestion from a lay quarter that perhaps if we had studied the disease more thoroughly there would be less of it in the country.

To bring into stronger relief the contrast which I wish to draw, bear with me for a few minutes while I review a few familiar points. One of the great

¹ An address delivered before the Medical Society of the State of New York at Albany, February 1, 1899.

facts in the history of the past half century has been the remarkable increase in our knowledge of the infectious diseases. In any general survey of this group there is, perhaps, no single member of it upon which we physicians can dwell with greater pride and satisfaction than upon typhoid fever. In every relation the growth of our knowledge has been extraordinary. The etiology has been so worked out as to justify the hope that the remaining gaps will soon be filled. Think for a moment of the laboratory work of the past twenty-five years! Our position to-day is the result of the combined labors of thousands of workers in Europe and in this country—labors carried out with a devotion and zeal for which we general practitioners (I say nothing of the public) are not always properly appreciative.

I need not dwell upon any special points in the morbid anatomy, or indeed upon the symptomatology, in both of which we have progressed chiefly in a very much wider recognition of the clinical and anatomical features of the disease.

The diagnosis has been simplified partly by the accurate differentiation of it from typhus fever (which has almost totally disappeared), partly by the discovery of the parasite of malarial fever, but still more by the grouping of well-recognized symptoms, and by certain special methods for the detection of the bacilli or of the reaction of their products.

And most important of all for the individual patient our enlightenment on the question of treatment has been full, I will not say conclusive, in all directions. Nursing and diet are universally recognized as the most essential elements, and we have abandoned, in great part at least, the active measures of our grandfathers, bleeding, vomiting, and purging. The death-rate has been lowered eight or ten per cent. It is not an easy matter, however, to get the average physician out of the drug habit in typhoid fever. The words of the wise old man, Nathan Smith, should still carry weight: "It does not follow, of course, that the disease in all cases requires remedies, or that a patient should necessarily take medicine because he has the disease."

But these advances, as we call them, sink into insignificance before the triumphs of sanitation in the prevention of the disease. Sixty years of sanitary reform have swept away typhus and cholera and have restricted yellow fever within narrow areas; we have learned how to fight tuberculosis and diphtheria, and in a hundred other ways the prevalence of the infectious disorders has been lessened. One demonstration stands out in clear relief above all others—with a clean soil and pure water typhoid fever disappears. In cities which stood at the head of the

list in mortality from the disease, as Munich and Vienna, the death-rate has dropped to the lowest known percentage after the introduction of drainage and a good water-supply. The object lesson of some of the Continental cities has been paralleled in a few—but far too few—of the cities of this country. Figures in illustration and black diagrams have done duty at our societies until many of the members squirm at the very name of Munich. That imperfect drainage and a polluted water-supply mean a high mortality-rate from typhoid fever is the very alphabet of sanitary science. In scores of instances carelessness in one or other of these points has led to widespread epidemics; incessant vigilance is universally recognized as the price of safety. I need not dwell further upon this aspect of the question, but I repeat, Mr. President, that we can point with justifiable pride to typhoid fever as the best understood, the most carefully studied of the acute infections, the one most directly under our control, the one in which the greatest victories of hygiene have been won.

Let us turn from this picture with its glowing colors to a more somber canvas. Last autumn this nation in the moment of victory had a rude awakening, a sudden conviction, a hard lesson. A voice like that heard in Ramah went up throughout the land—"lamentation and weeping and great mourning." From Montauk Point to San Francisco, from Minneapolis to Tampa, Rachels were weeping for their lads cut off by a cruel disease. The most bloodless campaign in history was followed by a relatively greater mortality from disease than in any recent war, and chiefly from this very disease over which I have been chanting the peans of the triumph of our profession. To us these autumnal dirges rang no new tune; we had heard the same in the palace of the rich, in the crowded tenement, in the hospital ward, in peaceful New England valleys, in the settler's shanty of the far West, in the lumberman's shack, in the mining camp. Year by year we had listened to the Rachels of this land weeping for their fair sons and fairer daughters, not killed by any pestilence that walked in darkness, but by a preventable sickness that destroyed in the noon-day—the noon-day of the intelligence of a civilized people. People asked each other what it all meant. Nothing more than a slight extension of the judgment upon criminal neglect of sanitary laws. The number of soldiers who died of typhoid fever during and after the war was a bagatelle in comparison with the total annual deaths from the disease in this typhoid-stricken country. Throughout the length and breadth of the land typhoid fever prevails so extensively in township and county, in village and city,

that any large body of men aggregated together is almost certain to become infected.

This is a nation of contradictions and paradoxes. A clean people, by whom personal hygiene is carefully cultivated, displays in matters of public sanitation a carelessness which is simply criminal. A sensible people, among whom education is more widely diffused than in any other country in the world, supinely acquiesces in conditions shameful beyond expression. I do not propose to weary you with statistics, of which our journals and reports are full, but I will refer to a few facts drawn at random from three cities and three States, illustrating this shocking neglect.

Philadelphia, the most typical American city of the Union, presents to-day a state of appalling apathy. For years the diluted sewage of the Schuylkill Valley has furnished drink to its best citizens, who bathe for many days of the year in water resembling a thin pea-soup. Individually the Philadelphian seems to be—nay, he is—an intelligent being, who deplores sincerely this condition. Collectively such a community must be regarded as lacking in one of the most essential features of civilization. Last week (ending January 28th) there were 40 deaths from typhoid fever in the city, and 420 cases reported! Last year it is estimated that there were between 5000 and 6000 cases of typhoid fever, 600+ of which were fatal. A writer in the *Philadelphia Medical Journal* last week estimates the money loss from this disease at a million and a half dollars.

In Baltimore we are a little better off, though typhoid fever prevails extensively, and more than two hundred people die of it annually. The city is unsewered, has more than 80,000 cess-pools, and has a water-supply with unprotected sources. With proper sanitary measures the present death-rate of between 40 and 50 per 100,000 of the population should fall to 10 or 12.

The condition of the National Capital is an excellent sanitary index of the whole country, and illustrates, too, how persistently those in power neglect the repeated warnings of the medical profession. One might have supposed that in Washington, governed by a commission under direct control of the central government, and to a large extent free from the influence of politics, sanitary measures, which are everywhere recognized as essential, would be carried out. For years the Medical Society of the District of Columbia has agitated the subject, and committees have urged upon the commissioners certain much-needed reforms, particularly relating to the purification of the Potomac water, which is practically the only source of supply. A committee, of which Dr. George W. Johnson was chairman, re-

ported recently that for the past seventeen years there has been an annual average of nearly 1500 cases of typhoid fever.

Dr. Smart of the Army, a leading expert on sanitation, expressed the plain truth when he said the other day, that *in the matter of the purification of the water-supply of her large cities, the United States is a generation behind Europe*. Serious as is this condition in so many of the large cities of the Union, it is not, in reality, so dangerous as the widespread extension of the disease throughout the smaller towns and country districts. The last reports of three important States illustrate this. We gather from the "Report of the Board of Health of the State of Indiana" that of the ninety-two counties typhoid fever prevailed in all but ten, and from some of these there were no reports. A total of 655 persons died in the counties of the State from typhoid fever during the year ending September, 1897.

In your own State the last annual report issued (1897) gives the total number of deaths from typhoid fever as 1585+, to which must be added a very large proportion, at least, of the deaths recorded as due to the malarial fevers. If we allow, say, 38 deaths from the various forms of malarial infection in New York State, which I put as a very large figure for the year, this brings the total mortality from typhoid fever to 2000+. It is interesting to note, as bearing out what I said in connection with the wide extent of the disease in the country and smaller towns, that those districts of the State with a percentage of city population under 50 per cent. have a relatively greater death-rate. The maritime district, for example, with 90 per cent. of city population, has a death-rate of only 16+ per 100,000 of population, while the Hudson Valley, with only 40 per cent. of city population, has 37+; and the Mohawk Valley and the southern tier of counties, with 31 and 30 per cent. respectively of city population, figure with 34+ and 37 deaths per 100,000 of population.

In the organized study of sanitation Michigan is one of the model States of the Union. Dr. Baker's reports upon the prevalence of typhoid fever are of particular interest. In his last, 1897, it is stated that there were in Michigan 642 separate outbreaks of the disease, with 774 deaths, a rate of 23+ per 100,000 living. There were only three counties from which the disease was not reported. It is gratifying, however, to note the gradual reduction of the death-rate from typhoid fever in the State during the twenty-nine years available for statistical data. While still far too high, the persistent efforts of the State Board of Health are gradually limiting the ravages of the disease.

Mr. President, the problem of typhoid fever, no

longer in our hands, has become a question of grave public concern. What more can we, as a profession, do? From the text *Salus populi suprema est lex*; in season and out of season, we have preached sermons which fill huge volumes of State reports, and as regards typhoid fever, we have preached in vain. Perhaps not wholly in vain, since in many cities, as in Boston, in many States, as in Massachusetts and Michigan, the incidence of the disease has lessened materially; but the existing conditions are proof that we have failed to bring conviction home to the minds of the people. An incidental advantage of the late war was the direction of public attention to the widespread prevalence of the disease, but it is doubtful if the lesson was bitter enough to enforce at once the teaching that matters of health come within the province of practical politics. It may seem a hard saying, but for the sake of prospective victims in the years to come, let us hope that the deaths from typhoid fever this year in Philadelphia may reach 1000, and the number of cases 10,000. Then the citizens of that town will stop drinking sewage, and will soon be able to wash in clean water. Great epidemics are the only great reformers, but, except in limited areas, typhoid fever rarely now assumes pandemic proportions. Quite as impressive, though more difficult to teach, is the lesson of its disappearance in large towns previously hot-beds of infection by attention to ordinary sanitary laws.

The solution of the problem is easy. What has been done in many parts of Europe can be done here; the practical conviction of the people is all that is necessary. Upon them is the responsibility. Let us, meanwhile, neither scold nor despair. The good-natured citizens who make up our clientele, pay our bills, and vote the straight party ticket have but little appreciation of scientific questions, and are led as easily (more easily) by a Perkins or a Munyon than by a Lister or a Koch. Under the circumstances it is marvelous that so much has been achieved in fifty years. "The larger sympathy of man to man" which we physicians are called upon to exercise daily in our calling, demands that we continue our efforts—efforts often fruitless in results, but very helpful to ourselves—to educate this foolish public. What is needed seems so easy of accomplishment—the gain would be so enormous! We ask so little—the corresponding benefits are so great! We only demand that the people of this country shall do what Elisha asked of Naaman the Syrian—that they shall wash and be clean—that they shall scour the soil on which they live, and cleanse the water which they drink.

The problem will be solved when, first, every city

in the Union has a supply of pure water (including ice), and is properly drained; secondly, when suburban and rural hygiene are systematically organized. In many ways a city's danger is from the country. Infected milk, infected ice, infected oysters, and dirty health-resorts account for a considerable percentage of the cases treated in the towns. Many of the State Boards of Health need a more efficient organization; all need a larger annual appropriation. A bureau of public health should form an integral department of each State government, with which civic, county, township, town, and village boards should be in close organic affiliation. The salaries of the health officers should be changed from the beggarly pittance, almost the rule, to sums which would warrant a demand on the part of the public that such officials should have modern training in sanitary science. Special courses should be offered in the medical schools, as is done in England, or even diplomas given. All this will come when the health of the people is made a question of public, not party, policy. It is encouraging to note that such States as, for example, Massachusetts and Michigan, in which the health boards have the most efficient organization, are those in which the death-rate from typhoid fever has been progressively diminishing.

The responsibility for the widespread prevalence of the disease rests directly upon the wanton carelessness of the people. God's own country, with man's own backyard, and the devil's own cess-pools expresses the existing conditions. A three-fold duty devolves upon the members of our profession: First, to preach cleanliness! cleanliness!! cleanliness!!!; secondly, to give a loyal and willing support to the State health officials; and, thirdly, to guard every case of typhoid fever as a center and possible source of further infection.

Let us hope, Mr. President, that the lesson of last autumn has been taken to heart by the citizens of this land. Sometimes from our desolation only does a better life begin. Surely, the blood penalty has been paid in full for the gross neglect of sanitary laws. The wantonness of the sacrifice is so terrible, so inhuman. Nature is inexorable and, red in tooth and claw with ravin, knows nothing of our humanitarian care of the individual. But her sacrifice is never wanton. Careful of the type, careless of the single life, sacrifice is a law of being, a condition of existence. In one of his delightful lectures on the "Foundations of Zoology," Professor Brooks tells us that of the countless millions of the king of fish which yearly enter the Columbia River seeking the breeding grounds, in the stern impulse of propagation, none return. "The whole race is wiped out,

utterly exterminated, as soon as it arrives at maturity and physical perfection, in order that the perpetuation of the species may be assured." Our ways, thank God, are not Nature's. Indulge as we may in speculation on the improvement of the race, in practice we care nothing for the species, only for the individual. Reversing Nature's method, we are careless of the type, careful only of the single life. Year by year unwilling witnesses of an appalling sacrifice, as fruitless as it is astounding, year by year we physicians sit at the bed-sides of thousands upon thousands, chiefly of youths and maids, whose lives are offered up on the altars of Ignorance and Neglect. Walking always in its shadow, compassed always by its sorrows, we learn to look on death with mingled feelings. There is the death that comes with friendly care to the aged, to the chronic invalid, or to the sufferer with some incurable malady. Very different, indeed, is it with typhoid fever. A keen sense of personal defeat in a closely-contested battle, the heart-searching dread lest something had been left undone, the pitifulness of the loss, so needless—and, as a rule, "in the morn and liquid dew of youth"—the poignant grief of parents and friends, worn by the strain of anxious days and still more anxious nights—these make us feel a death from typhoid fever to be a Delian sacrifice.

For fifty years the profession has uttered its solemn protests, as I do this day; Mr. President, we have done more—we have shown how the sacrifice may be avoided and the victims saved.

SHOCK.¹

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If we study the world over the causes of fatality following major operations, we find either sepsis or shock at the head of the list. Of recent years there has progressively been a lowering of the mortality due to infection of wounds; but is this true of the proportion of deaths from shock? It has seemed to me that for many years little advance has been made in our method of handling shock. No surgical topic more deserves our research; none receives it so little. An infinite number of minor topics takes up the time of our investigators, but this, the great lion in the road to recovery, is avoided to a degree that is surprising. How can one help feeling astonished at such neglect who observes that even the most recent surgical text-books almost ig-

nore it? For example, in New York State, two prominent works, recently issued, of 1240 and 1600 pages, respectively, devote the one, four, and the other three pages to the entire topic of shock! The same is true of the largest and most recent London work on surgery, of 2272 pages, which devotes four of them to the greatest cause of surgical deaths (next to infection),—not much more space than is devoted to bunion!

Space precludes a discussion of the pathology of shock, and yet a few sentences are necessary in order to make clear the views upon which at least in part the treatment is based. Doubtless, the last word has not yet been written on this topic. Nevertheless, the experiments of Professor Golz of Strassburg¹ have never been successfully contravened. They are well known to all surgeons.

We may divide our cases of shock into, *first*, those in which the cause, whether a physical or a mental blow at the nervous system, partially abrogates the functions of the sympathetic nervous centers; *second*, where the cause partially abrogates the functions of the cerebrospinal nervous centers, as well as of the sympathetic.

In the first group the brain does not succumb to the blow. It is still capable of performing its functions fairly well. The sympathetic nerves, however, no longer properly invigorate the cardiac ganglia, and the tone of all the blood-vessels is also lost. Because of the weak heart-action the blood tends to accumulate in the veins. The patient bleeds inwardly, that is, into his own veins. The blood, like any fluid, must move in the direction of least pressure, and so it accumulates in the relaxed, dilated veins, leaving the arteries partially emptied. The condition in its resultant symptoms is identical with internal hemorrhage. I know of no surgeon capable of making a diagnosis between this not very uncommon type of shock and inward bleeding. It is interesting to note that Professor Hare has recently shown that death from chloroform narcosis is really death from shock; his words are: "The man is suddenly bled into his own veins and capillaries as effectively as if into a bowl."

We should note that in this, sometimes called the erethistic type of shock (to distinguish it from the commoner torpid or apathetic type), the victim is usually perfectly conscious until nearly the moment of death; occasionally, toward the end, he is a little delirious or even convulsive, from cerebral anemia. He is restless, tossing about; he is thirsty, and yet often nauseated; he sighs for more air; his skin is cold, pale, and wet; his pulse is rapid and feeble. Are

¹ Read at the Ninety-third Annual Meeting of the Medical Society of the State of New York, held at Albany, January 31 and February 1 and 2, 1899.

¹ Virchow's Archives for 1875. "Ueber den Tonus der Gefässe und seine Bedeutung für die Blut bewegung."

not these, each and all, the signs of inward bleeding? But they are just as truly the signs of the erethistic type of shock. I am personally cognizant of two instances in which a famous gynecologist, a man of great surgical experience, treated a patient *post-operationem* for shock, but the autopsy showed the abdomen to be full of blood, due to a slipped ligature of the stump. In the one case (shock) the bleeding is *into* the paralyzed and dilated vessels; in the other (hemorrhage) *out* of the vessels. But the symptoms are one and the same, and are due mainly to lack of blood in the brain and heart.

In the second and commoner type of shock—the torpid or apathetic—not only the sympathetic system, but also the cerebrospinal centers, have felt and partly succumbed to the blow. The patient is, in the milder cases, mentally benumbed; in the worse ones, quite unconscious. Because of this benumbing of the higher centers, the signs of this, the commonest type of shock, necessarily differ very much from those of the first type described. He does not suffer, as would an active brain, from dyspnea, nor is he restless, nor does he complain of nausea or of thirst. He has, however, the cold, pale, sweating skin, the rapid, feeble pulse, the shrunken features of inward bleeding. Often he has lost control of his sphincters. Sometimes he is a little delirious or convulsive—more commonly, simply in stupor. His symptoms are precisely those of hemorrhage, except as just stated, and the reason for the difference is obvious.

The only condition (save inward hemorrhage) which can be confused with shock is fat embolism, and the differential diagnosis is not difficult. It is a special danger of fractures, and lacerations of or operations upon fatty tissues. At first the lungs suffer most from the infarction; later, if the patient survives and the fat is forced on through the pulmonary capillaries, the kidneys and other organs may also undergo fatty embolism. Five points aid in clearing up the diagnosis: (1) The time at which fat embolism develops. This, as compared with shock, is usually late, from two to three days after the injury. (2) The cyanosis, due to plugging of the vessels of the lungs. (3) The extreme dyspnea, with very rapid breathing and sometimes bloody foam or even hemoptysis. (4) The mental excitement which often ushers in the symptoms. (5) The presence of fat in the urine.

Causes of Shock.—These are properly divided into I. *predisposing*, and II. *exciting*.

I. Under the first head, fear is a considerable factor. I know personally of one fatal case in which the subject, shown by an autopsy most carefully made

to have no apparent lesion or disease of any organ, died apparently of sheer cowardice, some hours before the time set for operating upon piles. His agitation and fright rapidly increased, and he suddenly collapsed, dying within an hour, and with symptoms of shock. All measures tending to reassure patients and to calm them are of utmost value in preventing shock. This is one reason why the writer always prescribes whisky and a little morphin with atropin an hour before operation. The patient, otherwise more or less frightened, takes his anesthetic in a calmer, an almost cheerful, frame of mind. Also, as these drugs are analgesics, less ether or chloroform is needed than otherwise, and hence there is less danger from it.

We should not forget, as one peril from major operations under minor anesthesia, that a conscious patient must be nervously affected in an unfavorable way by hearing the saw grating through his bone, or by seeing the bloody paraphernalia used, etc. All this tends to invite shock. To illustrate, an aspirating needle may safely be introduced in several directions into the brain of a patient who is under general anesthesia; whereas, the same needle would probably cause prompt death from shock if driven into the brain of the same patient while conscious. Furthermore, a conscious patient whose thoughts are diverted elsewhere, at the time of being cut, is apt to feel much less shock than one who is nerved to the suffering he is expecting. It is easier to snap a tense thread than one relaxed. All military surgeons have noted that a soldier severely wounded in battle may not realize it at all, for some time thereafter; and will suffer less from shock than if he were to lie down on the table in a state of expectancy, and while conscious receive an equally grave physical injury.

From the above points it follows that although one may, for example, amputate a thigh painlessly under cocaine or other minor anesthesia, it may very possibly result in a greater degree of shock than would have followed general anesthesia.

Under the heading we are discussing comes also impairment of vital energy by uremic or lithemic or diabetic troubles, or other constitutional dyscrasias; by opium or certain other habits; by prolonged sleeplessness; by business worries or other anxieties; by recent illness; or by either infancy or extreme old age. Sometimes, too, there is a family inheritance whereby the slightest operation proves perilous; whereas, on the other hand, we occasionally find a man whom the most scientific surgeon can hardly kill—such is his vital resistance to shock.

II. *Exciting Causes of Shock.*—These may come in the form of either mental or physical blows. We

are now discussing the latter, mainly; and regarding operations, there are four of chief importance. These are: (1) Loss of blood; (2) length of operation; (3) excessive major anesthesia; (4) loss of vital heat during operation.

1. As to the first of these four: with advancing years a surgeon has an increasing respect for a drop of blood. Hemorrhage is not the only cause of shock; indeed, one may die from shock produced by a blow on the abdomen, and without any bleeding. Nevertheless, hemorrhage is certainly the main cause. Shock is apt, in its severity, to be directly proportionate to the amount of blood lost.

2. As to the length of the operation, here is a matter too often neglected. In abdominal work, especially, speed is only second to asepsis as the leading factor in success. If the operation lasts an hour or more in a given case, the patient is apt to "die cured"; whereas, with half the time, or less, the great sympathetic centers do not suffer so terribly from the exposure. The most successful gynecologist I know operates with a speed like a sleight-of-hand trick.

Since the introduction of anesthesia, the really rapid operators have become few; and not all surgeons seem to realize how prejudicial to the patient it is to prolong an operation for the purposes of demonstration to the bystanders. I think it would be well if certain operations of grave peril were more often *parted in the middle*, so to speak. In the enucleation of some great tumor of the neck, for example, which has already taken much time, and promises with the careful dissection needed to occupy as much more, and in which the patient is weak—here let us leave our work unfinished, apply a sterile dressing, and wait two or three days if need be, until he is fit to bear the remainder of the cutting. Of course this is no new idea, but it is much less often adopted in practice than would seem wise.

3. As to excessive depth of major anesthesia, we all know that quite aside from the severity of the accompanying operation, this jeopardizes the patient's chances of escaping shock. Occasionally we see the surgeon permitting his assistant to keep the patient snoring heavily throughout. As a rule this, which is an indication of deep paralysis of the velum palati, is needless and worse.

4. It invites also the fourth main cause of shock enumerated—loss of vital heat. Prolonged and profound anesthesia, as we all know, results in a heavy fall of bodily temperature. And too often careless exposure of the subject upon the table adds to this chilling.

Treatment.—It is the chief purpose of this paper to endeavor to emphasize the extreme value of cer-

tain means of preventing shock which would otherwise develop. Upon this plan of campaign against this great enemy can we alone rely for better figures of mortality than those of the past. If we wait until shock has actually struck its blow, too often that blow proves deadly. Where the gravity of the operation or severe loss of blood or other cause makes shock a probability let the surgeon use the "ounce of prevention" by striking first!

Of course we should endeavor to build up the patient's vital resistance by all means in our power. Where weakness from a constitutional dyscrasia or from any removable cause exists the indication for a preparatory line of treatment is plain. In most cases it is also well to exhibit strychnin in minute doses for several days before a major operation, thereby invigorating the nervous system. But the chief reliance, the one which is already working wonders in the hands of those who know how to use it, is the free use of intravenous, hot, saline infusion injected while the patient is still upon the operating-table and asleep from the anesthetic, in cases where the advent of shock otherwise seems a probability.

The use of saline solution to treat a patient already collapsed from shock is not a new thing. Neither is it a brilliant success, because nothing is, when severe shock has actually arrived. Some textbooks mention it with dubious praise; others almost or quite ignore it. But the thing which is my own suggestion (so far as a study of the "Index Medicus" and the New York Academy of Medicine Library enable me to judge) is the use of this great weapon for good at the right time and the right temperature.

This plan for the prevention of shock has been in use in my clinic since the autumn of 1891, as a consequence of conclusions reached after several months of experimental work upon dogs, with hot and cold vascular saline infusion after bleeding, testing intra-arterial pressures at differing temperatures of the injected fluid, with the kymograph and the mercurial manometer, under the kind supervision of Professor Curtis in the Columbia University Physiological Laboratory during the winter and spring of 1890-91. So far as I have seen printed evidence other surgeons did not until later adopt this plan in prevention of shock,¹ and it is commonly ignored even today by the bulk of the profession.

In evidence of priority is submitted a brief quotation from the writer's paper read before the Surgical Section of the New York Academy of Med-

¹ Dr. F. Lange did, however, in 1888, advocate diluted claret by rectum to prevent shock, where a very bloody operation was anticipated; and Drs. Weir, Tiffany, and others in the discussion approved of water in this way. ("Trans. Am. Surg. Ass'n," vol. IV, p. 540, *et seq.*)

icine, November 9, 1891, and published in the *Medical Record*, January 2, 1892: "Whosoever has noted the vigor with which unstriated muscle everywhere reacts to the use of heat—for example, the much stronger and decidedly more permanent uterine contractions which result from hot post-partal injections as contrasted with cold ones—must believe it probable that such unstriated muscle, forming as it does a most important tunic of the blood-vessels, would be greatly aided by hot saline infusion in regaining its lost tone. Perhaps, too, the central sympathetic centers would feel and respond to this stimulus. Now, since a more vigorous cardiac action (for the heart, though striated, responds to the heat), accompanied by a somewhat restored vascular tone, would go far toward recovery both from hemorrhage and its attendant shock, I have felt that the experiment was well worth trying." (I had tried it as a preventive of shock upon dogs only, before the paper was written.)

Again, a quotation from the writer's article in the *Medical Record* for November 12, 1892: "And why would it not be well at the end of any and every operation grave enough to make shock a probable result (though, because of the ether, not as yet at hand), to inject subcutaneously (*i. e.*, intravascularly) a quart or two of hot salt-water? It would be painless, the patient not yet being out of anesthesia. It would certainly be harmless. And I believe it would do much to prevent, by maintaining filled blood-vessels, otherwise fatal shock from developing. It seems not improbable that we shall ultimately see this done as a matter of routine after all severe operations." At that early date the writer had tried the method in but very few instances to prevent shock, using a half liter or more within the vessel and as much more in the cellular tissues; and could not, of course, speak as all can to-day who have used it properly, with absolute certainty as to its value upon human patients.

In this connection five points deserve especial consideration:

(a) The place of entrance, (b) the proper solution, (c) the proper temperature of that solution, (d) the proper amount, and (e) the speed of introduction.

a. In most cases the median basilic vein is chosen for the cannula. Occasionally a vein in the operating-wound will do. The writer demonstrated some years ago that if one is caught short of tools—has no scalpel, no cannula, no dissecting forceps nor retractors at hand—the saline infusion can safely be made to enter the common femoral artery (which, being large enough to admit a lead-pencil, can always be felt pulsating if the patient still lives) by aid of

a hypodermic needle attached to a Davidson syringe or a fountain-syringe.¹

We must not neglect to mention that when speed is not a factor—when a prompt stimulant effect is not essential—the rectal route is an excellent one. Even during the operation the maintenance of a full, large bowel by means of Kemp's rectal irrigator can only be of benefit and is additionally a means of safeguard against dangerous chloroform narcosis—by maintaining filled vessels. And after the patient is removed to bed it is sometimes wise (in order to maintain the good effects of the intravascular infusion until the danger-point is well past) in bad cases to give the hot colonic irrigation alternately, an hour on and an hour off, for perhaps a half day.

When, following confinement, the accoucheur has a partly exsanguinated patient, he adds wonderfully to her comfort if he injects high up a couple of liters or more of very hot salt water by rectum. It is instructive to note that not a drop of the amount thus poured into the colon will ever be seen again. It is taken up greedily by the thirsty blood. In an emergency, elevating the foot of the bed upon a high chair and pouring in the salt water through an ordinary tin funnel inserted in the anus suffices. If the loss of blood has been extreme, intravascular infusion should also be employed; for the condition of the bowel-wall, and of the refuse material coating it, may, at times, have an adverse effect upon ready exosmosis of the salt water from the intestine, rendering this route perhaps less trustworthy.

As to hypodermoclysis, it is the slowest of all methods. The lymphatics are not very speedy in permitting the diffusion of water entering the connective tissues. Also, if the proper bulk of fluid is so introduced, it means quite a number of punctures, painful the next day. To prevent shock, then, I do not advocate this route so much as others. Upon its special value at times in choleraic infant diarrhea I have heretofore written.²

b. The fluid used should be the so-called normal, really decinormal, salt solution; which is six parts of common table salt per thousand, boiled, and filtered; roughly, a heaped teaspoonful to the liter or quart. So far as we are able to observe, this is as good, practically, as more complicated formulæ resembling more closely the exact chemical composition of the blood-serum. The use of blood transfusion, both for treating post-hemorrhagic conditions and shock, has been entirely dropped, as no more effective at the moment than saline infusion, and as being dangerous, later, both from possible embolism and from

¹ For details, again discussed, as to this emergency method, see *Medical Record*, December 10, 1898.

² *Medical Record*, November 12, 1892; also, December 10, 1898.

the certainty that every blood-cell so introduced will speedily break down, threatening to clog the liver and kidneys with the waste products of destructive or retrograde metabolism of tissues.

It does not seem so widely known as should be the case that plain warm water, devoid of sodium chlorid, must not be used intravascularly. For example, in a recent article, in the *Medical Record*,¹ upon "Saline Infusion," the author, Dr. Reilly, copies without adverse comment a most dangerous bit of advice from Messrs. Bosc and Vedel, namely, that "ordinary water is non-toxic, not very destructive to the red corpuscles, and might be used in an emergency." Also, in the "Transactions of the London Obstetrical Society" (meeting of December 6, 1893) may be seen a similar suggestion by a member, Dr. Horrocks, who was of opinion that the salt was a luxury, but not a necessity. He did not claim, however, actually to have ever used plain water in this way, and no member present agreed with him in advising it. It is certain that whosoever tries this, will, if the water be used in the customary large amount, kill his patient with quite indecorous speed by a wholesale disintegration of the red discs. The addition, however, of even so small a proportion of salt as six-tenths of one per cent. renders it safe for vascular infusion. Perhaps a quotation from an experiment of mine at the Columbia University Physiological Laboratory may emphasize this point, which surely needs emphasis.² "On May 15, 1891, I operated on a large dog, weighing before operating 16.77 kilos. On the one-in-thirteen hypothesis (of blood to body-weight) his weight of blood would have been 1290 grams, or, allowing for the specific gravity of blood, about 1222.75 c.c. The cannula of the mercurial manometer was introduced into the right carotid. The right femoral was used for bleeding, the left femoral for injection of the hot salt solution. Professor Curtis superintended the working of the kymographic needle. Dr. F. J. Brockway assisted me. We drew 563 c.c. of blood." Upon attempting to replace this, and a smaller subsequent bleeding, by the salt solution with which at various temperatures I was experimenting, "a mistake"—a most interesting and instructive one—was made. Dr. Brockway and I each supposed that the other had added the salt to the hot water, whereas in fact neither had done so. And within a minute after receiving a considerable amount of this plain-water injection the animal died." Previous dogs, bled to an equal degree, had done beautifully and recovered under saline infusion. Hence, we were much puzzled until Professor

Curtis asked if the salt had been added, and stated that without it water in considerable amount will kill almost as quickly as prussic acid—and in the way already named.

c. The proper temperature for the injection-fluid is *as hot as the hand can bear*, and this is about 120° F. or 49° C. (Of course the temperature at the heart, when the great bulk of blood has diluted the slowly entering fluid, will be much lower than this.) There need be no fear of injuring the blood or other tissue by such heat. Very many times the writer has now used it, and never with cause for subsequent regret. This point seems not at all well-known as yet in the profession, and nearly all the text-books still advise infusion at about 100° F. The higher temperature here recommended is very stimulating to the flagging heart, and maintains the tone of the muscular tunic of the vessels. This is well illustrated in the photographs I now show you of kymographic carotid tracings at various temperatures. So recently as last winter Dr. Robert Coleman Kemp, at the Columbia Physiological Laboratory, in pursuing some investigations in a somewhat different line, had occasion to repeat my manometric and kymographic experiments of some seven or eight years ago, and re-verified their correctness—he, too, finding that at 118°–120° F. the tracings showed the best results upon heart and vessels. His statements were published in the *Record* early last autumn.

To maintain the desirable degree of heat, the reservoir containing the water should be wrapped in a large warmed towel or sterile blanket during the time occupied by the act of infusion.

In Dr. Reilly's article, quoted, he mentions a conclusion of Athansin, a French experimenter, upon this matter of the proper heat, which I must believe to be an error. He says: "In animals, at least, solutions having a temperature of 165° to 175° F. can be safely used." Now, upon reference to Kirke's "Physiology," eleventh edition, p. 846, it will be seen that globulin coagulates at 70° C. (158° F.), and Dalton's "Physiology," seventh edition, p. 80, affirms that serum-albumin clots at 72° C. (162° F.).

It will be noted, however, that both 158° F. and 162° F. are about 40° F. hotter than the hand can support, as above stated. So that the temperature which I advise is a long way from being unsafe. The hand-test of the heat, as suggested, will be found both safe and accurate enough in actual practice.

(d) The proper amount of the injection-fluid may be set down, for the adult, as never less than a liter, often two liters, and occasionally, perhaps even three liters, injecting always very slowly. To

¹ November 12, 1898.

² See *Medical Record*, January 2, 1892.

give a half-liter or less is, for the prevention of shock, almost valueless. The upper limit of safety has not as yet been very exactly formulated. The kidneys readily remove any water from the blood in excess of its needs. Should these be diseased, a less amount must of course be employed than otherwise.

(c) The time occupied in introducing the fluid into a vein should never be less than ten minutes per liter. To be sure, I have seen it caused to flow with double this speed and without ill effect; but, on the other hand, a temporary period of threatening heart-failure due to this cause—a rapid overstimulation—has been at times observed.

Of late we have all noticed in the journals that a few enthusiastic friends of this plan of preventing shock by saline infusion are using it at the *beginning* of the operation—before even a drop of blood has been lost, or any strain whatever put upon the nerve-centers. If this were only done by the plan of keeping the large bowel full of hot salt-water I should find no fault, for here the blood will to some extent take up water only as it needs it. But I doubt the wisdom of the preliminary distention of vessels by intravenous infusion; for one reason, because it is plain that by such a practice we add to the amount of blood lost. For every spurting point will, from increased pressure, spurt much more vigorously before it can be caught, than otherwise it would do.

Just a word as to the repetition of the dose. Many times I have read of surgeons using it once in a given case and reporting a temporary good effect, but that subsequently the patient died of shock. Now, of course no method can save all cases of every dangerous disease; but common sense would teach us that if a dose obviously does good it should be repeated, and this so long as the same indications call for it. From this it does not follow that we must open a vein again and again. The rectal hot saline douche will if rightly used, give approximately as good results for such purposes. The bed should always have its foot elevated very high, and this should remain so until danger of shock is well past. This position maintains a better supply of blood to both brain and heart, and also helps in the retention of the fluid in the large bowel. Alternately an hour on and an hour off seem to produce more desirable results than a steady maintenance of the flow through Kemp's tube. I think it wise not to consider the patient past his danger until the pulse becomes as low, at least, as 120 per minute, and shows no tendency to occasional increase above this number.

Thus far I have discussed the *prevention* of shock,

but have said nothing as to its treatment when actually developed and threatening the patient's life. Concerning this last I have little to say, and that is not new. If we are unfortunately called to an accident case, and find the victim in collapse, which is another name for shock, hot saline infusion is worth trying—but with small hope. Strychnin hypodermically is probably, when used freely, our best reliance. Some surgeons use it even to the point of producing slight spasms—if the shock does not yield earlier. Hot applications about the person are essential—elevation of the foot of the bed, a help. But two prominent "*donts*" should never be forgotten, namely, *dont* overstimulate the heart, and *dont* give a particle of food by mouth nor any medicine even remotely capable of causing nausea.

If the pulse comes down to anything like reasonably safe numbers—as discussed a minute ago—let well enough alone; for if that tired heart be overwhipped it is likely to quit work. And as for the second "*dont*," what is nausea in all of its symptoms but one type of shock? There is the cold, wet skin, the weak pulse, the sensation of vital collapse; and no one should take the least risk of adding this—if not already present—to the surgical shock.

The duration of shock is not many hours, as a rule—as to its worse phase. Certainly it is not so prolonged but that the patient may easily have his strength sustained during this period, without using his stomach—by nutrient enemata, or hot coffee by rectum, etc. And any needful remedies which might otherwise nauseate can surely also be administered by this route, or better still, by needle. I dwell upon this matter, because one so regularly sees this "*dont*" neglected, to the patient's detriment.

I wish that time permitted a discussion of the question of amputation of crushed and lacerated limbs during shock, and of the relation of anesthesia to this problem, but this is impossible.

THE TREATMENT OF PATIENTS SUFFERING FROM PULMONARY TUBERCULOSIS WHO CANNOT GO AWAY FROM HOME.¹

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I BEG leave to introduce my remarks by the report of two cases:

CASE I.—November 13, 1897. J. P. B., male, aged twenty-five years; nativity, U. S.; occupation, bank clerk; single. Family history good. Personal

¹ Read before the New York State Medical Association at its Fifteenth Annual Meeting, held at New York, October 18, 19, and 20, 1898.

history: Residence in lower part of city, on rather low land, in brick house without cellar; very little sunshine. Habits good. Scarlet fever in childhood. Four and one-half years ago had so-called "nervous fever"; sick with high fever for four weeks; probably typhoid; complete recovery. In April, 1897, had an attack of epidemic influenza; since then has coughed constantly; has had almost daily an afternoon rise of temperature and frequent severe night-sweats. Appetite poor; bowels regular; temperature in afternoon 102.5° F.; tongue broad, pale, flabby, and covered with slight gray coating; pharynx pale; larynx normal. Physical examination of chest revealed infiltration of both apices with softening and small cavity in right upper lobe and infiltration at base of right lung. General bronchitis throughout both lungs. The amount of sputum in twenty-four hours was 200 c. c., mucopurulent in appearance and nummular, containing many pus-cells, some pus-organisms, tubercle bacilli, micrococcus tetragonus, and elastic fibers. Weight 149 pounds. Height 6 feet 2 inches.

This case was not one that promised well for treatment, but I explained to the young man the nature and character of his disease and impressed him with the importance of attention to every detail of the treatment suggested and encouraged him in the belief that by persistence in treatment he might recover. The treatment instituted was as follows: An out-of-door life; sitting, well-wrapped up, on the veranda, when rain, wind, or wet snow prevented walking; at other times walking in the open parts of the city where purer air could be found; careful attention to a daily evacuation of the bowels; a full warm tub-bath once or twice a week and a cool sponge followed by brisk rubbing every morning; regularity in hours of meals and slowness of mastication and swallowing of food; food to consist chiefly of meat, eggs, baked potato, boiled rice, stale bread and butter, and some of the green vegetables, fruits, and plain desserts; beverages, milk (not to be taken at the same meal with meat), water, cocoa or chocolate, coffee in moderation. The medical treatment consisted of a proper emulsion of cod-liver oil and the administration of guaiacol and terebene emulsified with milk of magnesia and syrup of tolu, and the use of an inhalation containing one gram of menthol and two grams each of spirits of chloroform, guaiacol, terebene, eucalyptol, and thymol. Five to ten drops of this on absorbent cotton was packed tight in a cigar-holder inhaler for constant use, the drops and cotton being renewed every two or three hours.

He has been under this treatment for eleven months and has made constant but slow improvement. The entries on my record book are as follows: February 14, 1898: Improved in all respects. Weight 155 pounds 10 ounces. May 9, 1898: During last two weeks has not felt so well; has coughed more; expectoration, however, is somewhat less (150 c. c.), varying somewhat from day to day; the elastic fibers have become much less; tubercle bacilli decidedly fewer in number, but the pus-cells

and organisms remain about the same and the micrococcus tetragonus is still present. Physical examination still shows the evidence of infiltration of upper right lobe, though the evidences of active softening have disappeared and the cavernous breathing is becoming more bronchial in quality and pitch. The evidences of infiltration of left apex show that the area is much diminished and the evidences of infiltration of the right base have disappeared; there remains, however, sibilant and sonorous breathing with râles throughout both lungs. Weight 155 pounds, 4 ounces. At this time there was added to his treatment the following mixture:

R	Balsami copaibæ	6.00
	Mucilag. acaciæ	50.00
	Morphin. sulph.	0.10
	Ol. menth. pip.	0.10
	Ol. amygdalæ amaræ	0.20
	Syr. toluatani	44.00

A teaspoonful of this was taken every four hours. From this time on his improvement continued uninterruptedly. On June 9th his weight was 156½ pounds; the expectoration had diminished to not more than 100 c. c. in twenty-four hours, the elastic fibers could no longer be found, there was only an occasional micrococcus tetragonus, and very few tubercle bacilli, but pus-cells and organisms were still present.

I did not see the man again until October 10th. He told me he considered himself well and for the last month had taken no medicine but cod-liver oil, but had continued the use of the inhalation. He has almost no expectoration; succeeded in saving only 2 c. c. in forty-eight hours. Careful examination of the centrifuged sample shows no tubercle bacilli, no micrococcus tetragonus, no elastic fibers, and only a few pus-cells and organisms. The physical examination of the chest gives no signs of disease except bronchial breathing in the right supra- and infraclavicular region and increase in vocal resonance in the same regions and in the right interscapular region. Not a râle is to be heard. His weight is 161½ pounds.

CASE II.—March 18, 1898. Mrs. G. W. K., U. S., aged thirty-six years; occupation, housewife; residence, country village; well built, dry house. Habits good. Family history: Parents both dead at the age of sixty-nine years, mother of dysentery, father probably of some form of heart disease. One sister died in childhood of dysentery and one of acute phthisis following childbirth. Personal history: Patient has had all of the acute infectious diseases of childhood; has been well since then until present illness began; has two children, eldest three years old, youngest three and one-half months old.

The patient did not nurse her first child; nursed her second child for three weeks, but had to stop on account of very sore nipples. She said she took cold when the baby was four weeks old and had coughed ever since; *i. e.*, for two and one-half months. On February 3d raised one ounce of dark blood. Her greatest weight has been 120 pounds; her present weight is 111 pounds, 10 ounces. She is pale and

thin in appearance, has irregularly recurring chills and fever and occasional severe sweats. Her temperature at 2 P.M. is 103° F., respiration 22, and pulse 134, small and compressible. She sleeps badly on account of cough which is much worse at night. She has been distinctly hoarse for a week or ten days. Her appetite is poor but she seems to digest her food and has no gastric distress. Her bowels are persistently constipated. Her capillary circulation is poor as evidenced by cold and bluish hands and feet. Examination of her throat shows a pale pharynx and infiltration of the posterior laryngeal wall, with swelling of the arytenoid cartilages and some redness of the vocal bands.

Physical examination of the chest reveals a weak cardiac first sound with marked accentuation of pulmonary second sound. Tubercular infiltration in upper lobe of each lung with cavity of considerable size and small cavity in left. She did not bring her expectoration with her but said it was considerable, chiefly raised at night and early in the morning.

I sent her home with a very bad prognosis, writing to her physician that I thought her case was one that would go on rapidly to death but that it was always well to try in cases of tuberculosis even though they seemed hopeless. I gave her a diet-list and wrote out the following directions for her daily life: Sit out of doors all day long, covered sufficiently and protected from inclemency of the weather. As strength returns take drives and finally walks. Take a tumblerful of hot water every morning one hour to one-half hour before breakfast, and a tumblerful of cold water one-half hour before each of the other meals. One hour after breakfast, whether there is desire or not, have a movement of the bowels, inducing it by enema if it cannot be had otherwise. Three hours after breakfast take half a pint of milk with a raw egg and a tablespoonful of whisky or sherry stirred in it, and a very little sugar. Three hours after dinner take the same or a cup of chicken broth with a teaspoonful of somatose stirred in it. Three hours after supper take half a pint of hot malted milk. With the noon meal drink a pint of lager beer or half a pint of ale or porter. Every morning use a cold-water spray over the shoulders and chest in front and back, followed by rubbing with a soft crash towel. A cold sponge bath every afternoon at 4.30 or 5 o'clock, followed by a similar rub. A full hot bath in the tub once or twice a week. Dress warmly with wool next the skin, but never wear a so-called chest-protector and never wrap anything around the throat. The medicinal treatment included the same inhalation as in Case I. and the same guaiacol and terebene emulsion.

On May 15th her physician wrote reporting improvement in all respects. On July 15th she again came into my office feeling much better. She had gained three pounds in weight; the chills and sweats had disappeared; her temperature was 100° F., though she said she no longer had fever. her pulse was 100; her respiration 20. Appetite had returned; bowels were still constipated; she slept better,

coughed and raised less; hoarseness had disappeared. Examination showed that the swelling and redness of the larynx had disappeared; there was still the cavernous breathing in each upper lobe, but there were almost no râles. Presuming upon her improvement she had already begun to let up on the strict carrying out of instructions. I tried to impress upon her the importance of persistence, but I have since learned from her physician that she is failing, again having the chills, fever, and sweats, but not to the same severe extent as formerly.

I have chosen these two cases from quite a large number because neither was a promising case for treatment, but each shows how much can be accomplished by persistent trying. For the examination of the sputum in these cases, as in all my others, I am indebted to Dr. Nelson G. Russell. For the formula for the inhalant and the suggestion of the cigar-holder inhaler as well as for the pharmacal fact that guaiacol can be made into emulsion with milk of magnesia, I am indebted to Dr. W. H. Woodbury.

With these cases as a text I desire now to make a few remarks in regard to the treatment, hygienic, dietetic, and medicinal, in cases of pulmonary tuberculosis. I wish to emphasize the fact that we are called upon to treat *cases* of pulmonary tuberculosis and not pulmonary tuberculosis in the abstract, and that the careful study of each case is of the utmost importance in outlining the treatment, the treatment of different cases of pulmonary tuberculosis differing fully as much as the treatment of typhoid fever differs from that of pneumonia.

Of equal importance with, if indeed it is not of greater importance than the medicinal treatment of pulmonary tuberculosis is its hygienic management. Many years ago a prominent physician of Boston, recognizing that he had pulmonary tuberculosis, stopped work and drove in a buggy, his wife accompanying him, through the State of Massachusetts, taking a year to do it. He recovered without medication and reared a family of twelve sturdy children. The diary that he kept on this journey is an interesting medical history. He drove in all sorts of weather and through a variety of scenes and a diversity of atmosphere that would go to show that climate in and of itself is not of so great importance as sometimes appears. What was the great factor in his recovery? An out-of-door life in pure air. He avoided the cities in his journey and lived a regular life as to meals and the functions of excretion.

The most important factor in the climatic treatment of pulmonary tuberculosis is not the warmth, the dryness, the rarefaction of the air, but its purity, its freedom from extraneous matter of any sort.

Given a case of pulmonary tuberculosis in the incipient stage, when the normal resisting powers are not too much encroached upon and put the patient in a pure atmosphere, relieved of all worries, and he will get well. When we have a patient who cannot go away then we should, so far as possible, make a good home climate for him. Make him live out of doors all the time, sitting, driving, or walking, as may best be done. Next to the purity of the air, and a factor in producing it, is sunlight. Let him sit in the sunlight and stay on the sunny side of the street when he walks or drives. Let his room be the sunniest and airiest in the house and never have it entirely closed up. If possible have it heated by an open fire and thus procure good ventilation through the chimney.

As regards the personal hygiene of the individual the avenues of excretion should all be kept open to aid in the elimination not only of the normal excreta of the metabolism, but also of the poisons generated in the individual as a result of the infection. Recognizing that the normal excretory function of the lung is greatly interfered with by its diseased condition we must call on the other excretory organs to do its work. Not only the bowels and kidneys, but the skin, which is one of the great sewers of the body, must be kept up to its work. As far as the bowels and the kidneys are concerned they can be depended upon to do their share of the work if supplied with proper kinds of food and a sufficient amount of water. By the sweats which occur in acute infectious disorders and are followed by amelioration of symptoms more or less persistent according to the disease, Nature has pointed out to us that by sweating we can rid the body of many poisonous products. Dr. Charles G. Stockton of Buffalo first suggested to me the advisability of induced sweating as a means of preventing the drenching night-sweats of phthisis. In a limited number of cases this procedure seems to have been successful.

As far then as the hygiene of the skin is concerned in patients who are up and about a full hot-water bath should be taken once or twice a week, or a hot-air or steam bath once a week given in the late afternoon or evening and a tepid or cool sponge once a day given in the morning and followed by brisk rubbing. In the case of patients who cannot take this treatment on account of weakness a tepid sponge bath may be given every afternoon about five o'clock and a hot-air bath once a week. As regards the diet of a patient suffering from pulmonary tuberculosis very few general rules can be laid down. The digestive power of each individual has to be studied; there are the greatest varieties, from a normal gastric digestion to marked increase in hy-

drochloric acid and excessive motility of the stomach, the food being passed into the intestine in altogether too short a time or in the other direction to absolute achylia gastrica and great deficiency of gastric motility. The foods desirable for these patients are, however, meats, especially rare beef, eggs, baked potato, boiled rice, and boiled young beets; the drinks are water, milk (not to be taken at the same meal with meat), cocoa, and chocolate, and in moderation coffee or weak tea. The mouth should be kept clean with an aseptic wash and the food should be thoroughly masticated. So far as the respiratory system is concerned the nose, pharynx, and larynx should be put in good condition and kept so by the use of sprays and douches if needed.

The subject of exercise, both general and special, I have left for consideration by itself, for in this matter especially is it necessary to study each case. If the patient suffers from hectic fever, is expectorating profusely, or is having hemorrhage, even though slight, or if physical examination reveals marked involvement of one or both lungs general exercises should not be undertaken at all or very gradually and increased very gradually; under these circumstances pulmonary gymnastics should not be indulged in at all. The danger of too great general exercise is from the fact that the oxygenating surface is too limited to supply the demand. The danger of special pulmonary exercises is the possibility of scattering further through the lung the infecting foci through the process of inspiration pneumonia. Cases in which general exercise and special pulmonary exercises are useful are those in which there is only a slight local bronchitis or very slight pulmonary infiltration.

The medicinal treatment of a case of pulmonary tuberculosis is naturally divided into local and general. The local treatment consists in the application of medicinal agents for the purpose of curing or alleviating the morbid state of the tissues. The treatment of laryngeal tuberculosis will not be touched upon. The question arises, Can we reach the bronchial and alveolar mucous membrane with medicinal agents in any way to be of value? Evidently sprays and inhalations are our only means, but sprays rarely reach beyond the vocal bands or at the farthest, the trachea. They are of little use. The same thing may be said of inhalation of solutions of medicaments in the fixed oils, but inhalations of the essential oils seem to reach further and can be kept up almost constantly. Of the various essential oils the oil of peppermint is by far the best; it can be used in the form of the essence and seems to have a direct effect in diminishing pus and lessening cough. The cigar-holder is a cheap and efficient inhaler.

As for the general medicinal treatment, from the reports of many physicians tuberculin and antitubercle serum have been of undoubted value in early cases. In my own hands they have not as yet been successful. As far as my experience goes nuclein, administered hypodermically, is the best remedial agency in early cases. I have several cases of apparent cure from this treatment. Among remedies administered by the mouth, creosote, or some of its derivatives still stands at the head of the list. In the administration of creosote it is important in the first place to secure a pure article, to administer it regularly, always after food, to increase the dose gradually but regularly, carefully watching the urine, as well as looking for gastric disturbance. I have given as much as 2 c.c. at a dose three times a day for three months in this way. The gradual reduction of the dose is as important as the gradual increase in its size, the sudden stopping of the large dose sometimes producing very unpleasant results. The carbonate of creosote has not been of any greater value than the pure creosote, nor has it been better borne by the stomach. The same may be said of the carbonate of guaiacol as compared with guaiacol. In some cases guaiacol can be taken when creosote cannot. When there is a great deal of pus in the sputum terebene combined with the guaiacol is often of value. Balsam of copaiba is also often of great use under similar circumstances. It can be easily administered in emulsion with mucilage of acacia and syrup of tolu. In cases in which there is marked intestinal fermentation or gastric intolerance of pure guaiacol, the benzoate of guaiacol is often tolerated and acts very well. It can be given in doses, gradually increased, of from 0.25 to 1 gram, three times daily, in capsules. In all patients in whom it does not produce gastric or intestinal disturbance cod-liver oil is still our sheet-anchor in the medicinal treatment of phthisis; nothing has yet been found which can take its place. The pure oil can be taken by some individuals, but not by many. An emulsion can generally be made which will be tolerated by the stomach. After taking cod-liver oil for a while, whether pure or in emulsion, the individual generally becomes accustomed to it to such a degree as actually, in many cases, to like it. In these days of proprietary medicines and made-up emulsions, which are said to be strictly ethical, and are said to contain thus and so, whose working formulæ, however, are not published, many physicians are losing the art of prescribing, but really a freshly made emulsion, put up by a competent pharmacist, is much to be preferred to the made-up emulsions that are on the market.

Special symptoms in some cases call for special

treatment. I should like to refer briefly to some of these. Pain in the chest is not infrequently a troublesome matter. Its cause should be searched out. If due to pleurisy it should be treated by strapping or dry cupping the chest; if it is a neuralgia it is best relieved by aconitia ointment locally, general treatment, and building up of the general resisting power. Sometimes the local use of iodine in ointment or tincture seems to be of avail, but in such cases it seems to me that time is as much a factor as the iodine. Cough is a necessary concomitant of pulmonary tuberculosis, and should not be too rashly interfered with. A troublesome, irritating cough with little or no expectoration is generally due to pleurisy or some disturbance of the upper air passages, and treatment should be directed accordingly. Cough is best treated by inhalations, such as have been suggested, or by the administration of hydrocyanic acid and chloroform water. Cough is frequently a matter of habit and can be prevented by mental discipline. The administration of cough mixtures containing stimulating expectorants and opium should be avoided as far as possible. It is very seldom that the stimulating expectorant has any place in the treatment of phthisis, and opium and its derivatives are absolutely out of place, except in advanced cases beyond recovery, in which nothing can take their place. To a patient in advanced phthisis opium is truly the great and good gift of God to man. Hemoptysis is best treated by rest in bed and the administration of morphine and atropine, hypodermically.

The fever of tuberculosis is best treated by the sponging and general plan of treatment already suggested. The use of antipyretics is to be deprecated. Sweats are best combated by general treatment and the baths and induced sweats referred to, but they sometimes call for special treatment. In my hands nothing can equal atropine in the relief of this distressing symptom.

Of the gastric symptoms requiring special treatment vomiting is the most distressing. Sometimes it is necessary to put the patient absolutely to bed in such cases. Careful investigation of the stomach with the tube is sometimes of value. In severe cases of vomiting in phthisis, however, whether induced by cough or not, large doses of cerium oxalate, 1 gram at a time, are of especial value. Of the intestinal symptoms diarrhea is the most serious. If the general treatment as outlined does not relieve this condition, benzoate of guaiacol is our most useful drug. In the distressing diarrhea of advanced phthisis, however, nothing can take the place of the lead and opium pill.

In closing my remarks I wish to make a plea for

the careful study of individual cases and the use of treatment especially adapted to each particular patient, and the avoidance of routine treatment of cases of pulmonary tuberculosis.

CLINICAL MEMORANDUM.

ASTRAGALECTOMY FOR INVETERATE TALIPES EQUINO VARUS, WITH REPORT OF A CASE.

By JAMES K. YOUNG, M.D.,
OF PHILADELPHIA;

PROFESSOR OF ORTHOPEDIC SURGERY IN THE PHILADELPHIA POLYCLINIC; CLINICAL PROFESSOR OF ORTHOPEDIC SURGERY IN THE WOMAN'S MEDICAL COLLEGE OF PENNSYLVANIA, ETC.

THE patient C. A. J., male, white, thirty-one years of age, a Swede by birth, and a cook by occupation was admitted to the University Hospital July 13, 1898. He was unable to work on account of his increasing deformity. His family history was good and his own health had always been excellent, except for the deformity, which was congenital.

The examination showed a marked talipes equino varus of the right foot. The astragalus was luxated. The gait was peculiar, the knee being turned far inward

FIG. 1.



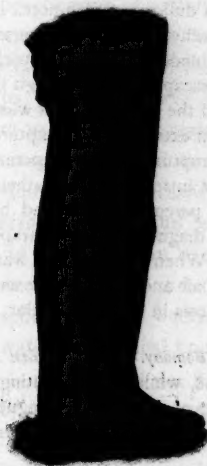
Astragalectomy. Before operation.

in the effort to bring the foot to the ground. There was contraction of the extensor muscles of the toes.

On July 15th I operated, Dr. Willard having been called in consultation. A complete excision of the as-

tragalus was performed and a division made of the extensor tendons of the toes and also of the tendo-Achillis. The incision was a long curvilinear one, beginning in front of the tendon of the peroneus longus and extending across the arch of the foot to the tibialis anticus. The joint was opened and the bone removed with a dry dissector, great care being taken to prevent injury to the posterior tibial artery as the inner portion was removed.

FIG. 2.



Astragalectomy. After operation.

The foot was brought into proper position and a plaster cast applied.

On July 26th the left foot was found to be deformed in like manner to the right, but in a much less degree. The extensors of the toes as well as the tendo-Achillis were divided and a plaster cast applied. The casts were kept in place six weeks, only being removed to admit of the antiseptic washing and dressing of the wounds. On October 4th the following note was made: The patient has been walking about the ward on crutches since September 15th and has walked the length of the ward without crutches. Very little weight, however, can be borne on the right foot. On October 10th the patient was discharged, cured.

This case is interesting not only on account of its extreme rarity, very few surgeons having ever performed this operation in the adult, but because of the excellent and useful joint which results after the operation. The removal of the entire astragalus does not interfere with the motion of the joint. The malleoli adapt themselves to the tarsal bones and the joint is almost as useful as an ordinary ankle-joint. The difference in the length of the limb is from one-half to three-quarters of an inch. Prompt and uneventful recovery from the operation is the usual course in such cases, and the operation is to be considered as equivalent to an amputation or excision at this point, although the operation of astragalectomy is more difficult than either of the others.

MEDICAL PROGRESS.

Differential Diagnosis between Extra- and Intraperitoneal Rupture of the Bladder.—DITTRICH (*Deut. Zeit. f. Chir.*, vol. 50, p. 204) found by percussion over the symphysis pubis of a patient, whose pelvis had been crushed by the wheel of a wagon, a deep box-tone, more noticeable just before catheterization, and which increased after the patient had been catheterized several times. Each time after the catheterization the box-tone changed to a dull percussion-note. The urine came out through the catheter in spurts, due to the clonic contractions of the bladder-wall. Dittrich attributed this box-tone to the escape of air through the catheter, into the tissues around the bladder. As was shown by operation there was an extraperitoneal rupture of that viscus. If the bladder is ruptured into the peritoneal cavity, the air, which may be introduced by a catheter, will not have any effect on the percussion-note, and hence he regards this symptom as diagnostic of an extraperitoneal rupture of the bladder. When the incision was made over the symphysis pubis, air and bloody urine escaped, thus confirming the diagnosis in every particular.

The Plague at Bombay.—The *Indian Medical Record*, December 1, 1898, while congratulating the country on the mild character of this season's plague at Bombay, has this to say about the prophylactic handling of the disease in general:

"The laws of plague have still to be elucidated and in the dark as we are at present, we can only agree with those authorities who tell us that it runs a regular and predestined course, which all human efforts are powerless to check or perhaps even to modify.

"We used to hear a lot about stamping it out. It was at one time a favorite catchword with all plague officials, they know better now and the pet expression has departed from their reports. The most vigorous action on the part of the Bombay Government failed to have any appreciable effect upon the previous epidemics, while it had the ill result of interfering with the social condition of the people and of wearing out their patience.

"Now curiously enough when the most severe of the measures, which were considered an absolute necessity at first, have been abolished and while others have been modified and pared away to an almost invisible tenuity, the plague quietly takes it into its head to depart. All these things are strange and inexplicable paradoxes to the modern sanitarian with his shibboleth of isolation, segregation, and disinfection.

"Unfortunately the low death-rate in Bombay, averaging only 185 per week for October, and less than half of that for November, has not been universal in India, and in some districts there have been over a thousand deaths a week."

Poisons Produced by Animal Parasites.—PEIPER (*Centralbl. f. inn. Med.*, December 17, 1898) states that all the animal parasites contain poison or develop in their metabolism substances which act as such. Even ascaris

lumbricoides is by no means so harmless as is generally supposed, and is capable of producing severe symptoms with indications of cerebral irritation. Its devastations are seen, for example, in the West Indies among the black races, and especially among the children. These ill effects are seen not merely in the vicinity of the worms, and cannot be explained by the motions of the latter, nor their abstraction from the diet of nutriment necessary to their host, but they are due to absorption of toxins or leucomains from the intestine. One thing noticeable in the round worm is its peculiar sharp odor, which often causes conjunctivitis in those who busy themselves with its growth in the laboratory.

The presence of tapeworms is occasionally followed by disturbances of vision. The anemia of bothrioccephalus, which is seen in only a few of the patients who harbor this parasite, is due to the action of a poison upon the red blood-cells. The anemia of anchylostoma is also to be explained by the presence of a protoplasmic poison, as the amount of the blood sucked by the parasites could easily be made good by the regenerating power of the system. The fluid in echinococcus cysts certainly contains poisonous material since the puncture of these cysts may cause peritonitic lesions, and even the death of the patient.

The epileptic attacks and psychic disturbances which accompany the presence of oxyurias in large numbers cannot be satisfactorily explained upon a theory of mechanical irritation alone. Trichinosis gives the picture of a severe infectious disease sometimes within a few hours of the ingestion of trichinous flesh, and no theory of mechanical irritation produced by the presence of the animal parasites will explain these symptoms. The author believes that all animal parasites contain or produce poisons which may act unfavorably on the nervous system or the blood of the host.

Tuberculosis of the Uterus.—VASSMER (*Arch. für Gynäk.*, vol. 57, p. 301) has had opportunity to observe six cases of tuberculosis of the uterus at the dispensary for women in Göttingen, during a period of ten months, and he regards the trouble as not nearly so rare as do some other writers on the subject. Four of these patients were in the third decennium, while two were older. The symptoms were chiefly pain in the pelvis and sacrum, without hemorrhage or discharge. The uterus was found to be more or less enlarged, according to the extent of the disease. The mucus from the cervix was not found to contain tubercle bacilli. The diagnosis was made by microscopical examination of scrapings from the body of the organ. The treatment was by curetting, and intra-uterine application of tincture of iodine in mild cases, and by removal of the diseased portions of the genital organs in the more advanced cases. The tubes, one or both, were affected in four of these six patients; in the other two, they were apparently free. The results of treatment were satisfactory, the only patient who did not survive being one with extensive abdominal and pulmonary tuberculosis, upon whom nothing more than an exploratory incision was made.

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Subscription Price, including postage in U. S. and Canada.

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SATURDAY, FEBRUARY 25, 1899.

NEWSPAPER MEDICAL EXPRESSIONS.

WE are treated every now and then in the daily newspapers to an amusing series of misapplied and misconstrued medical expressions. Whenever some important occurrence calls, in the description of its incidents, for the use of medical terms and medical opinions we are sure to have a fresh display of delightfully unconscious but thoroughgoing ignorance. The recent death of the President of the French Republic has given an excellent opportunity to ambitious newspaper men to make "ducks and drakes" of medical expressions to their hearts' content. Of the tentative way in which the President's medical attendant's name has been spelled and misspelled and dismembered and mishyphenated, we shall say nothing. It must be remembered, however, that Dr. Lannelongue is one of the best-known members of the profession in France, and was chosen at Moscow a year and a half ago as the president of the next International Medical Congress.

The Associated Press informed us, the morning after President Faure's death, that he had been suffering for some time from general paralysis. As he had been, until the end, one of the clearest-headed

of men, and recognized by his associates in the Government as possessed of the highest practical executive ability, it is easy to see what we are to think of this. At his death, we are told that just before the end "one doctor had drawn the tongue to keep the lungs alive" (sic), while a second held a bag of oxygen to his nose. Equivalent mistakes with regard to unfamiliar court ceremonies and involving the misapprehension of national peculiarities might be forgiven, but medicine is a universal science, and any medical man if consulted would have been able to point out these patent errors. There would seem to be no good reason why modern progressive newspapers should insult the intelligence of a large number of their readers by ludicrous mistakes. The errors are mild and few on this occasion compared to what they can be and have been when the expense of cabling did not prevent an omniscient correspondent from wading far beyond his depth in the waters of medical knowledge.

Blunders such as these would not be tolerated for a moment if they had reference to movements in financial circles or were concerned with parliamentary or political or social happenings. Is there any good reason why the truth should be less precious in medical matters? Our American newspapers, at least, have gotten beyond that stage in their evolution where they can afford to be ridiculous in their methods of presenting news. It is time there was an end of it. Some one with trustworthy medical experience should, on an occasion like this, be consulted, and so save the infliction on an unoffending public of some of the ludicrous medical expressions we now have to bear.

SANITARIA FOR TUBERCULOUS PATIENTS.

WE present this week an abstract from the Fourteenth Annual Report of the Adirondack Cottage Sanitarium of Saranac Lake, N. Y. The report is pregnant with suggestion as to the therapeutic value of sanatoria in the treatment of tuberculosis. To one unaccustomed to the statistics of sanatoria it seems almost impossible that such results as are reported can be obtained in the treatment of that dread disease — tuberculosis. We gave sometime ago an abstract from the Report of the Loomis Sanitarium, and while we thought it well to criticize certain features of the report the general results ob-

tained could only be the subject of gratulatory comment.

Our American sanatoria for tuberculosis are attaining as good results in the treatment of the disease as are claimed for similar institutions abroad. What we want now is more of them, and especially more of them so endowed and supported that the poor, and even the indigent, may be able to enjoy their benefits. The removal of large numbers of tuberculous individuals from the ordinary hospitals, and from among the crowded populations of our cities would be of untold service to humanity by limiting the spread of disease. Since the great majority of these patients can, as the statistics of sanatoria show, be returned to their homes after but comparatively short intervals cured or apparently cured, and no longer the source of infected material, the benefit conferred is twofold.

Drs. Brush and Pryor, at the recent meeting of the New York State Medical Society, each showed by calculation of the annual loss to the State because of sickness and death from tuberculosis, that even from an economic standpoint alone, the establishment of State sanatoria for consumptives would be a magnificently profitable investment. But there is, besides the merely sordid view, the great motives of humanity, and the lessening of the present death-rate from consumption which now carries off, despite hygienic precautions and sanitary measures, something more than one-seventh of our population.

The bill providing for the establishment of at least one great State sanitarium in a suitable place in the Adirondacks has been presented to the State Legislature. It thoroughly deserves the effective sympathy and unfaltering cooperation of all who are interested in decreasing the suffering of humanity. It is no new and untried experiment that is to be put into action. The treatment of tuberculosis in sanatoria has forced itself by its results upon the medical profession in the Old World, and the favorite charity of the crowned heads of Europe has become in this last few years the establishment of such institutions for their poor people. Scarcely a State in Europe, however small, but has one of them, and many have a number, and all are planning for new ones, the results of those at present existing having been so satisfactory. Let us hope that the sovereign State of New York will prove as mindful of the

wants of her people, and that the proverbial ungratefulness of democracies shall not be exemplified by the inaction of her legislators in so important a matter.

THE SCHOOL DENTIST.

The School Dentists' Society is an association of dental surgeons in England whose object is to supervise school-children's teeth and see that they are not allowed to decay seriously before receiving proper attention. The *British Medical Journal* remarks that the suggestive statistics it has collected and that have been recently made public in the address of its president, amply justify its existence. As the result of investigation by the school committee appointed by the British Dental Association some years ago, it was announced that the teeth of more than eighty-five per cent. of 10,000 school children of the average age of twelve years needed skilled attention because of premature decay. Similar statistics have been obtained as the result of investigation along other lines.

The School Dentists' Society has been calling parents' attention to these conditions and seems to be arousing parental consciences in the matter. The *British Medical Journal* says that one at least of the large English public schools has taken definite steps toward caring for pupils' teeth. A system has been instituted by which the mouth of every boy is examined at entrance and the actual condition of his teeth charted. A copy of the chart is sent with a note from the head master to the parent or guardian calling attention to pathologic conditions existing and asking that they be remedied before the boy returns for the next term. The charts are kept up to date by subsequent examinations and are filed away for ready reference at any time while the boy is at school. Every Saturday (school holiday) throughout the year a dentist is in attendance to treat such cases as parents desire to have dealt with at school.

This system has been in operation for the past five years and the masters and parents are eminently pleased with the results. The resident medical man writes emphatically of the good that has accrued to the general health of the children and the greater attention paid to this matter by parents. Not the least of the benefits obtained has been "the foster-

ing in each pupil of the (often too dormant) principle of personal dental hygiene with all its attendant and far-reaching advantages."

As the neglect of the teeth in early years often leads to an immense amount of suffering in later life this English idea of dental interest in school children seems a most commendable one. The entrance to the *primæ viæ* is important too, because of its relations to the digestive tract. The application of the best hygienic principles here cannot fail to benefit greatly the general health. Our American dentists are so well known for enterprise that we are a little surprised to find that they are anticipated by our Anglo-Saxon cousins across the water in a matter like this; we know of no effort that is being made in this direction in this country. The idea of taking care of school-children's teeth is an excellent one. It is next in line for attention, now that the importance of the school physician has come to be generally recognized, and the prevention of the insidious development of pathologic conditions during early years is looked upon as the best pledge of a generation of healthy adults and a vigorous old age.

THE RELATIVE VALUE OF MURMURS AND THE POSITION OF THE APEX-BEAT IN HEART-DISEASE.

Nor long ago in a court of law in a reasonably large town, a doctor on the witness-stand in a suit for damage said that he could very soon tell whether the plaintiff had a heart-lesion or not if he were allowed to *listen* to his heart. The answer is one that is characteristic of most medical men. The generally accepted idea is that a murmur is pathognomonic of heart-disease, and its absence indicative of freedom from disease. There is, of course, the well-known fact that in extremely anemic cases, especially in young people, a systolic murmur may be hemic in origin, but apart from this murmurs and heart-lesions are correlative factors.

One of the best diagnosticians in Europe, especially in thoracic diseases, Professor Gerhardt of Berlin, is known not infrequently to begin a clinical demonstration in this way: "The apex-beat is not displaced, percussion to the right of the sternum shows that the heart-dulness does not extend in that direction. The patient, therefore, either has no heart-lesion, which is extremely prob-

able with the physical signs mentioned, or, if a heart-lesion be present it is not one that the physician need bother his head about; it needs no treatment, in fact, meddling treatment would do more harm than good."

There is, in the matter of cardiac diagnosis, an axiom in the internal-medicine clinics at Vienna that comes usually as a distinct surprise to American students who go there. It runs somewhat this way: Be very careful about diagnosing the presence of a valvular heart-lesion unless the apex-beat is displaced. Murmurs may come and murmurs may go, an American with poetical aspirations once said, but the apex-beat has an enduring significance that must not be neglected. Systolic murmurs at the apex without displacement of the apex-beat or accentuation of the second pulmonary sound are phenomena that may be regarded with entire indifference. These may form a large part of the cases in which the murmurs disappear after treatment, and they are published as cases of cured valvular heart-lesions.

The lesson is an important one. Murmurs are at times difficult things to recognize and locate as to time and place; the apex-beat is the most easily recognizable of physical signs, and yet it is of the greatest significance and importance in deciding as to the existence of a heart-lesion and its indications for treatment. There are, of course, the diastolic murmurs that are absolutely pathognomonic of a valvular lesion, but even in the presence of these the position of the apex-beat is of much more importance as far as regards the prognosis and indications for therapy in the case than any nice distinctions as to the character, pitch, and time of the murmur.

THE UNITED STATES ARMY RATION.

So much has been said during the past few months about the manner in which our soldiers were fed during the recent war, and the question of providing food during the next few years for large bodies of troops in distant parts is so important that we have felt called upon to give considerable space to the recent discussion upon this subject at the New York Academy of Medicine.

The discussion was shared in by men who had large practical experience in the recent campaigns of Cuba and Puerto Rico; by men who know also the

nutritional qualities of the United States Army ration and its adaptability to the requirements necessitated by the most varying circumstances of climatic, meteorologic, and telluric conditions. The arraignment, by Majors Seaman and Woodbury, of the army ration as supplied during the recent war would seem to be amply justified by the almost universal experience with it as a source of intestinal, and mental, irritation. Old regular army officers, however, insist that this was not due to the army ration itself, which has been finally adopted after a great deal of study and practical experience, but to the failure of the transportation department to carry all that was committed to it. Commanding officers can, under ordinary circumstances, so vary the diet of their men by drawing alternates for certain articles and by supplying from the company fund things easily obtainable in the country where they are, that there need be no complaint of want of variety. In fact troops have been successfully maintained upon the present army rations during many years both in the bitter winters of Dakota and in the enervating heat of Texas. The real difficulty seems to lie not in any actual deficiency in the army ration itself, but in the failure to properly provide and prepare it.

Too much dependence was placed on precedent in the management of army affairs; too much confidence on the results of the practical experience of the Civil War. There was a clinging to antiquated methods that has resulted seriously. Let us hope that the dearly bought lesson will not be without avail in the colonial military experience upon which we are about to enter.

ECHOES AND NEWS.

Appointment at the Chicago Clinical School.—Dr. J. R. Pennington has accepted the Professorship of Rectal Diseases in the Chicago Clinical School, formerly the West Side Post-Graduate and Policlinic.

Congress Accepts Dr. White's Gift.—On February 17th the Senate at Washington passed a joint resolution accepting from Dr. Octavius A. White of 1011 Madison avenue, New York City, three famous historical paintings as a gift in pious remembrance of his father, John Blake White, the artist.

A Physician's Gift.—Dr. Edward Murphy of New Harmony, Ind., has given \$42,000 for the town's public library. Several years ago he provided \$30,000 for the erection of the library building. The doctor is eighty-six

years old, and desires, he says, "To dispose of my property without the intervention of courts and juries."

Nurses for Consumptives.—The Rev. Father James O. S. Huntington, Superior of the Order of the Holy Cross, a congregation of celibates in the Episcopal Church, having their mother-house at Westminster, Md., proposes the establishment of a new religious sisterhood, whose life-work would be to nurse consumptive patients.

Resolutions upon the Death of Dr. McGillicuddy.—At a recent meeting of the Faculty of the N. Y. School of Clinical Medicine resolutions were adopted expressing the great loss sustained by the School in the death of their esteemed colleague, as well as by the community at large in the demise of one of its most useful citizens and a representative medical man.

The Health Department, City of New York.—For the week ending February 11, 1899, there were reported 170 cases of measles with 12 deaths, 186 cases of diphtheria with 34 deaths, 16 cases of laryngeal diphtheria (croup) with 5 deaths, 181 cases of scarlet fever with 13 deaths, 1 case of smallpox with no deaths, 35 cases of chicken-pox with no deaths, 252 cases of tuberculosis with 160 deaths, and 11 cases of typhoid fever with 5 deaths.

Dr. Cushman Resigns.—Dr. William F. Cushman, for many years Treasurer of the Board of Trustees of the New York Academy of Medicine, has sent in his resignation because of continued ill health that makes it impossible for him to fulfil the duties of the position any longer. His resignation was accepted at the meeting of the Academy of Medicine on Thursday, February 16th, with regrets at the circumstances that occasion it. His successor, until the next regular election, will be chosen by vote of the members of the Council at their next meeting.

Disease from Telephones.—President Murphy of the New York City Board of Health, believing that telephone transmitters are a means of spreading disease, has ordered inspectors to examine the public telephones. The inspectors will thoroughly cleanse the transmitters and receivers with cotton, which will then be sent to the Bacteriological Department of the Board of Health. Should it be found that telephones are likely to disseminate disease organisms, an order will be issued requiring daily disinfection of the instruments by the telephone companies.

The Health Board's Sales of Antitoxin.—On February 7th a hearing on Assemblyman Collier's bill to repeal that section of the Greater New York Charter which allows the sale by the Health Department of its surplus antitoxin took place before the Assembly Cities Committee. James McKeown, Dr. Love, and H. L. Russell, all of New York City, appeared to advocate the passage of the bill. Mr. Russell declared that the Health Department's dealings in this lymph were so profitable that the health authorities could not be induced to try other methods or other lymphs.

Death During Tooth-Extraction.—On February 5th, at

Meriden, Conn., John E. Smith, aged thirty-five years, and apparently in good health, called on Dr. L. T. Doolittle to have sixteen teeth extracted. Dr. E. W. Delcher was present, and gave chloroform, an amount "not exceeding a teaspoonful." During the extraction of the second tooth the patient collapsed and died. His death was pronounced due to strangulation. It is well to remember that it is never safe to begin operative procedures in chloroform narcosis until the patient is completely anesthetized.

The Medical Society of Seattle, Washington.—At the tenth annual meeting of the King County Medical Society, recently held at Seattle, Washington, the following officers were elected for the ensuing year: Dr. Montgomery Russell, president; Dr. R. W. Schoenle, vice-president; Dr. Wm. L. Ludlow, secretary; Dr. C. B. Ford, treasurer. The stated meetings are held on the third Monday evening of each month. The society has a strong and representative membership among the medical men of the city, the society standing for all that is best in the interests of medical science in a county where such influence is strongly needed.

A New Convalescent Home.—A small convalescent home for women and children has recently been opened in Brooklyn, on Harway avenue, near Gravesend Bay. Although organized and in part supported by some German ladies, it is open to patients of all nationalities as far as accommodations will permit. Admission is upon the recommendation of one of the managers and a physician's certificate. The charge in the small wards is three dollars a week, while five dollars is charged if a patient has a room alone. In certain circumstances a patient is taken free if unable to pay this small amount. Application may be made to the matron, Mrs. V. Hollweg.

Female Nurses in the Army.—A bill has been introduced into the United States Senate providing for the employment of female nurses in the Army, in number not less than one-half of one per cent. of the enlisted men. It authorizes the establishment of a Nursing Commission, composed of the Secretary of War, the General Commanding, the Adjutant-General, the Surgeon-General, and three trained nurses to be selected by the President. This Board is for the general supervision of the service. All nurses employed must be graduates of hospital training-schools. A superintendent is provided at a \$3000 salary, and an assistant-superintendent at \$2000. The nurses' salary will be \$40 a month.

A Scientific Food Wanted.—The "embalmed-beef" controversy now pending in military circles moves a writer in the New York *Sun* to quote "a noted physician" as stating that "a graham gem and an apple contain every element necessary to the sustenance of the human body." This statement induces the *Sun* correspondent to ask why an army cannot be fed without the danger arising from the use of doubtfully prepared beef.

No doubt, rations of the sort mentioned above would meet the approbation of Mr. Richard Harding Davis, who has been, it is said, "in a state of mind" because marshmallows were not served to the troops before Santiago, and because the men in the trenches could not be manicured.

New Editor of the Journal of the American Medical Association.—The Board of Trustees of the American Medical Association met February 17, 1899, at the Sherman House, Chicago, for the express purpose of selecting an editor for the *Journal*. The result of balloting was the unanimous election of Dr. George H. Simmons of Lincoln, Neb., editor of the *Western Medical Review*, Secretary of the Nebraska State Medical Society, and of the Western Surgical and Gynecological Association. The salary of the editor has been increased from \$4000 to \$5000 per annum, but according to a resolution adopted by the Board, Dr. Simmons is compelled to devote his entire time to the interests of the *Journal*. Dr. Simmons became a member of the Association in 1897. He is a well-trained, well-informed medical journalist, and a racy, vigorous writer. He is also a man of great executive ability, and a good organizer.

Death Probably from Hydrophobia.—Walter McCann, aged twenty-two years, of Newark, N. J., died recently from what was supposed to be hydrophobia. He was bitten in the right leg and in the thumb of the left hand on New-Year's night. Two days later he felt a stinging sensation in his left arm, and, becoming alarmed, consulted a surgeon. The medical attendant did not consider the condition serious; as a matter of precaution, however, he cauterized the wounds. Ten days later, McCann was unable to walk, but was helped to get to the City Hospital where his wounds were cauterized once more. After this a consultation of physicians decided that the case was really one of hydrophobia. A series of paroxysmal seizures set in which gradually became more frequent and severe. A sudden noise, or a draught of air, or even a slight unexpected touch, caused him to writhe and twist in agony. It is said that the sight of water had the same effect. This is popularly considered a pathognomonic sign of hydrophobia, but the sight of water has no direct etiological effect in producing the convulsions. Death was in this case due to exhaustion from the number and severity of the convulsions during the few last days.

Words, Words, Words.—We have been not a little amused and interested at an editorial in the *Medical Era* of Chicago under the above caption. The editor takes certain recent exaggerated claims of our young Philadelphia contemporary as to the number of words it gives its readers for their subscriptions as compared with those given by other medical papers. The *Era* institutes another form of comparison. The matter taken by the *Philadelphia Medical Journal* from other medical papers constitutes 1,081,600 of the 1,927,400 words it furnished its readers for the year, leaving less than 850,-

ooo words of original matter supplied during the same period. As pointed out by the *Era*, this is, of course, considerably less than what is given by the MEDICAL NEWS. The whole affair, of course, is a juggling with statistics and word calculations, and the employment of the general methods of the advertising agent rather than a dignified appeal to the profession. It is not *quantity* of medical matter the profession wants. We are deluged with medical printed matter. We have not time to read a quarter of what we would like to read. What the profession wants is matter of special interest to the practitioner, carefully selected and boiled down as much as is consistent with its being properly and easily understood. We bow our acknowledgments to the *Era* for the compliment as to the value of our original matter as compared with our self-laudatory contemporary. We shall continue to give as far as possible what is best and most practical in general medical literature, put in such form as to be interesting and useful to the busy practitioner.

Mortality in New York in 1898.—According to the Bulletin of the State Board of Health for December, the mortality of the State of New York for the year 1898 was 120,972 from all causes; this is 3894 more than in 1897, which was a year of unusually low mortality, the average of seven preceding years. The delayed returns, not reported in the Bulletin, numbered 733, making the death-rate per thousand population 18.10, the average of the past ten years being 18.25. The death-rate of the Maritime district was 20.00 against 18.90 in 1897, there having been about 3500 more deaths; of the other districts there is no material variance from the rate of the previous year. Last year the saving in mortality was in the Metropolis. The infant mortality (under five years) was greater by 2300 than in 1897, though relatively decreased, constituting 30.2 per cent. of the total, against 32.5 last year, and an average of 33.5. The zymotic mortality constituted 13.6 per cent. of the total, against 14.0 last year and an average of 17.5. The decrease is confined to the urban communities, some of the rural districts showing a relative increase over last year. Among zymotic diseases there was an increase in the mortality from cerebrospinal meningitis in all but the Central districts; in typhoid fever in all parts of the State including the Metropolis, amounting to about 450 deaths; in whooping-cough by 300 deaths, the increase being limited to the Eastern districts; and an increase (by 1500) in diarrheal mortality from last year, though not beyond the average. Diphtheria caused 2620 deaths, the fewest of any year on record, being less by 1500 than in 1897 and less than half the average yearly mortality from this cause. Consumption caused 13,000 deaths, which is with slight variation the mortality of every year. There were 2500 deaths from grip which is less than the mortality of either of the eight preceding annual epidemics. Acute respiratory diseases had the average rate of mortality, that of other local diseases showed a moderate increase. The mean average temperature for the year was 48.5 degrees above the normal, and the total rainfall (average of State) 44.5 inches, or four inches above the normal.

SPECIAL ARTICLE.

FOURTEENTH ANNUAL REPORT OF THE ADIRONDACK COTTAGE SANITARIUM.

THE fourteenth annual report of this institution, just issued, is full of evidence of how much can be accomplished for tuberculous patients by treatment in a sanatorium and presents besides an eloquent picture of how much can be done for very deserving people unostentatiously and without appeal to the general public. The total number of "hospital days" at the sanatorium for the past year was 30,912 or 4116 weeks. The total receipts from patients, including \$1071.57 received from the Trustees of the Free Bed Fund, were \$24,563.91. The running expenses were \$32,435.35 or over \$7500 more than the receipts from patients, this excess being paid for out of the contributions to the General Fund. The cost per week for each patient was \$6.75 or \$1.75 more than the regular charge per patient per week which is \$5.

The results of treatment were most encouraging. The number of patients treated at the sanatorium during the year was 227 of whom 83 are still at the institution. Of the 144 patients who are the subject of report, 38 were discharged apparently cured, 44 with the disease arrested, 39 improved, 14 unimproved or failed and 6 died; while 3 remained less than a week and do not enter into the therapeutic statistics.

There were 34 patients who remained less than three months and of these 6 were apparently cured, 7 left with disease arrested, 13 were improved, 1 died, and only 3 were unimproved or got worse; 110 patients staid at the sanatorium from three months to over sixteen months, an average of over nine months. These are considered under three heads, incipient, advanced, and far-advanced cases. Of the 36 incipient cases, 27 were apparently cured; in 7 the disease was arrested, 1 was improved and only 1 was not benefited by stay at the sanatorium.

Of 48 advanced cases 9 were apparently cured; in 21 the disease was arrested; 11 were improved and 6 were not benefited, and 1 died.

Of 26 far-advanced cases, in 3 the disease was arrested, 13 were improved, 6 were not benefited, and 4 died.

With these statistics before us, it is interesting to note the definitions of the terms employed by Dr. Trudeau as given by himself in the report.

Incipient.—Cases in which both the physical and rational signs point to but slight local and constitutional involvement.

Advanced.—Cases in which the localized disease process is either extensive or in an advanced stage, or where with a comparatively slight amount of pulmonary involvement the rational signs point to a grave constitutional impairment or to some complication.

Far Advanced.—Cases in which both the rational and physical signs warrant the term.

Apparently Cured.—Cases in which the rational signs of phthisis and the bacilli in the expectoration have been absent for at least three months, or in which there is no expectoration at all; any abnormal physical signs remaining being interpreted as indicative of a healed lesion.

Arrested.—Cases in which cough expectoration and bacilli are still present, but in which all constitutional disturbance has disappeared for several months, the physical signs being interpreted as indicative of a retrogressive or arrested process.

The proof of the hygienic value of sanatorium treatment, besides the fact that it removes the affected individuals as sources of infection from the midst of crowded centers of population, is to be seen especially in the disappearance of bacilli from the sputum. In 99 out of 110 cases bacilli were present on admission; in 33 cases they disappeared not to return. One-third of the power for harm of the tuberculous patients treated was absolutely removed.

Dr. Trudeau is doing a great, good work at the Sanitarium, and deserves the sincerest congratulation for it. The unobtrusive, unostentatious character of the work renders it all the more surely a bit of the sincerest philanthropy. The utter unselfishness that has characterized the directors' management of the institution is known to but few, but highly appreciated by them, and will at some time be a fruitful source of inspiration to sincere philanthropists of the generation to come. It is a sincere pleasure to be able to record that the work continues to be supported by voluntary contributions, and that certain improvements in the plant have been made possible recently. The cottages are to be heated by hot water instead of stoves, as heretofore. This will enable them also to have hot baths. Five of the cottages are already connected with the hot-water system, and have their bath-rooms. A large new cottage has been presented to the Sanitarium by Mrs. A. A. Anderson, and will be ready for occupancy before the end of the winter. It is fully furnished, and combines all the improvements suggested by past experience.

A characteristic trait of the thoroughly practical thoughtfulness so typical of the management of the institution is contained in the following paragraph from the president's report: "As most of the patients coming during the winter months are not supplied with sufficiently warm clothing to enable them to carry out effectively the open-air plan of treatment during the coldest season, the institution has acquired by gift some twenty-five heavy fur coats, which are given out to patients in need of them for a nominal rent, just sufficient to pay for storage and repairs on these most necessary garments."

CORRESPONDENCE.

MESSAGE BY TRAINED NURSES.

To the Editor of the MEDICAL NEWS.

DEAR SIR:—The MEDICAL NEWS in a recent editorial advocates massage by trained nurses, saying that they ought to be able to carry out the instructions of physicians with regard to massage and that they should be trained for this purpose by a competent teacher, even if they have to forego less useful instruction.

Allow me say that physicians themselves ought to know enough about massage to show their nurses what to do

in individual cases. How many physicians know anything about the practical application of massage? One who has recently been my patient put it as one in a million. More than that are conversant with massage. A surgeon who has also been my patient said he thought that not more than one doctor in five hundred knew anything about the use of massage. This is more nearly correct. And yet almost every physician sets himself up as an authority on this subject without either study, instruction or practice.

How about the teachers of massage? They are usually selected from those who have had scant training and not time enough to show whether they are competent to practise it. Worse than that—at one of the Training Schools for Nurses connected with one of the large hospitals in New York an escaped convict, who was simply an acrobat and knew nothing at all about massage, was employed for a while to give instruction in massage. He soon earned for himself the *sobriquet* of the biggest liar in New York. Not long after that he was succeeded as a teacher in the same place by a graduate from a penitentiary of London whose sole claim to honor was that of having translated part of a French book into bad English and posing as the author. One of the recent medical dictionaries quoted him, his theft, and his bad English. The editor was promptly notified but made no response.

Now there is a first-class man in New York who is not only a gentleman but also a physician and masseur of wide repute. I am credibly informed that the profession in New York almost completely ignore him. The unwelcome truth of this whole matter is that the majority of physicians both in this country and abroad endeavor to get the cheapest ignoramus to rub their richest patients until the patients demand better. Is this the golden rule? I have already dealt with the unpleasant subject at some length in the *Boston Medical and Surgical Journal* of October 8, 1896.

DOUGLAS GRAHAM, M.D.

BOSTON, MASS., January 20, 1899.

A PRONOUNCED CASE OF HYDROPHOBIA.

To the Editor of the MEDICAL NEWS.

DEAR SIR:—I notice in a recent number of the MEDICAL NEWS a request that any one knowing anything about a case of suspected rabies should report the same. By way of introduction, I will say that up to the time of seeing the case I take pleasure in reporting I was very sceptical concerning the existence of this disease. My professors in school nearly all doubted it, and especially the professor of surgery, who openly avowed his belief in the non-existence of hydrophobia. He attributed deaths resulting from the bites of supposedly rabid animals to nervous shock and fright.

Again, during my nine-years' experience as a practitioner just preceding the time of seeing this case and having this teaching always in mind, I never met a doctor of much experience without drawing him out on the question as to whether or not he believed in the existence of this disease. I had never met one who had ever

seen a case, and it is hard to find one to-day who has. They claimed to have invariably found the sufferer to be a hysterical subject, and the case eventually proved to be true hysteria. So I concluded that there was, in fact, no such disease, the medical authorities to the contrary notwithstanding; and when people persisted in rushing to a madstone for the cure of the bite of hydrophobic skunks, I was inclined to smile and say, "What fools these mortals be!" In regard to these skunks, I desire to say right here, after an active experience covering twenty-six years on the Western frontier, that I enter my protest against the belief in the existence of rabies in a skunk (*Mephitis Americana*) which has not the disease as a result of having been bitten by a previously rabid animal. Animals die from this disease very quickly; they do not run about, like these skunks, a perpetual menace to man and beast alike; and dogs, where the *Mephitis Americana* abounds would be rapidly exterminated, and an occasional man or other animal would certainly develop this disease. There seems to be an abiding enmity between the dog and the skunk, and the dog, instead of catching one that had this disease, would have to be caught, for he knows.

During the summer of 1878 Mr. S., about eighty years of age, came to a house where I was stopping to get his dinner. He was then on his way to have a madstone applied to a wound resulting from a dog-bite through his thumb. Learning that I was a young doctor, he asked me what I thought of it and what he should do for it. I answered that the best authorities recommended the immediate excision of the part bitten, or the removal by amputation of the wounded member when this was possible, but since a week had passed since he was bitten this procedure would now be of doubtful efficacy. I reassured him as much as possible by saying that it was very doubtful if there had ever been a case of hydrophobia in America. His wife told me that she and the old man were living alone, and that when the old gentleman went to feed this dog at noon one day, just a week before, the dog had suddenly reared up and had bitten him through his thumb. Immediately thereafter, Mr. S., thinking the dog fierce because of confinement, had loosed him, when the dog at once jumped the fence and took the road toward a small town about a mile away. It was known that he had bitten several animals encountered on the way—dogs, hogs, and cattle—two or three of which had already developed peculiar symptoms, and some of these had died; hence, their determination to test the efficacy of a madstone. I told her that only a small percentage of the animals bitten by rabid dogs ever developed hydrophobia, if there was such a disease, and that I had no more confidence in the efficacy of a so-called madstone than I had in a piece of ordinary sandstone. They went on their way, and several days later I saw them on their return journey. They said that because turpentine had been applied to the bite the madstone would not stick.

I thought no more of the case until a runner came to ask me to visit Mr. S. to see if I could determine what was the matter with him. This was just eighteen days

after he was bitten. On arriving at the house I found the patient sitting bolt upright in bed, his face intensely congested and his eyes fairly glaring. They said that he had but little fever, but had peculiar convulsive seizures, which at times nearly choked him to death. He was fairly free from delirium. He was closely hemmed in by a number of country women, whom I with difficulty persuaded to move in order to give him breathing space. I sat and watched several minutes without letting him know I was present, for obvious reasons. I then approached him, spoke to him, counted his pulse (which was eighty, and full), looked at his tongue, and then assured him I had only casually dropped in to see him. Shortly afterward I walked back toward the door a few steps and requested a lady to hand me a cup of water and a saucer. I then stepped out in front of him, and drawing his attention poured the liquid from the cup into the saucer, when he immediately had a most horrible convulsion, which completely frightened me out of my wits, because of its severity and the strange expression on his face. I was absolutely afraid of him, as old and helpless as he was, and moved so that I had one or two women between us. When he recovered from this I waited half an hour, and then regretted the production of a repetition of one of these convulsive seizures by the same process. I then gave a very positive prognosis in the case, saying that I regarded the trouble as hydrophobia, and that the patient would surely die within three days. He succumbed at about 3 A.M. on the twenty-first day after the receipt of the injury. Dr. R., now of Bowie, Tex., entered a protest against my diagnosis, claiming that I had made a mistake, and proving this by the ability of the patient to take liquid nourishment on the very night of dissolution. I assured the people, who officiously came to tell me these things, that one of us was wrong, and the facts in the case, according to our best authorities, and the further fact that the patient died "promptly and on time," as the doctor himself was aware, made it almost positively certain that I was right. I also read from the text-books the assertion that the ingestion of fluids other than water was not always attended by convulsions.

A few years since I lived in the town of Montague, Tex. One night a dog, very evidently mad, visited nearly every residence in town and bit a great many other dogs. The following morning it was pursued and killed, and many of those bitten were also destroyed. At least half a dozen, which were spared at the time, developed rabies later and were killed.

In conclusion, I believe that there is such a disease, and that Mr. S. died from its effects, because, First, he was bitten by an animal which, biting other animals, produced as a result something exactly like hydrophobia. Second, that the man, after a proper period of incubation, developed true rabies and died from the effects of the disease. I believe that there is such a disease, because, First, the dog referred to in the second instance must have had it, for dogs madly fought her when she came in contact with them, and showed no desire to cultivate her acquaintance, although her actions were lascivious in the

extreme. Second, every symptom in her case pointed to the fact that she was mad. She made no noise on being shot, and it took many ordinarily fatal wounds to kill her. Third, other dogs developed symptoms which caused the owners, however much they thought of the dogs, to kill them.

Since it is communicable to dogs and other animals, it must be communicable to man also. There were many people, of course, like Dr. R. in the first instance, who did not and would not believe the trouble rabies.

J. E. STINSON, M.D.

CHICKASHA, I. T., January 30, 1898.

MEDICAL EDUCATION AND STATE BOARD EXAMINATIONS.

To the Editor of the MEDICAL NEWS.

DEAR SIR:—Professor James Finlayson's article on "Medical Education" in the *Edinburgh Medical Journal* (pp. 344-348, October, 1898) comes as a happy message to advocate modern methods of laboratory teaching as opposed to didactic lecturing. To this is added the satisfaction that there has lately sprung into existence in New York City a medical school whose keynote is practical teaching. The medical educational system has happily passed beyond the ermine and purple style of Trousseau, with his unbending dignity and pedantic phraseology. It is the ideal, though unfortunately not always the practice of the growing medical educational class to-day, that the mind is best trained through deductions arrived at by itself and that the duty of the teacher is not to arrange in well-ordered tables, etc., what others have worked out, but to direct the student's mind into these channels, *keeping the conclusions for the student himself to arrive at* and leading him back from by-paths which he is too prone to follow out to a blind ending. In America we are learning that students must come to our medical schools with minds trained to think systematically, but it is a lesson yet to be learned by many institutions, and herein lies the difficulty of adopting the purely practical method of teaching in American schools. It is, however, the right method, and in order to have practical proof of its value the writer is keeping records of the source of early training of members of his classes with the object of drawing, in a few years, conclusions as to the value of thorough mental training prior to beginning medical studies. It is absurd that we should expect to turn out men of international mental force in medicine so long as we attempt to train them in methods of both thought and medicine during four short years. The principles of medicine alone are too profound for untutored minds to grasp and we have passed the time when institutions should be allowed to turn out men who have learned only not to do harm.

Another and very serious condition which must, sooner or later, be met, is the impossible methods of examination employed by the majority of State medical boards, methods unpardonable and long ago abandoned by the European schools. I refer to the examining in four days, morning and afternoon, on subjects which have required four years to master. What is quickly learned is quickly

lost. Is it a feat of mental gymnastics we wish to see if the men can perform, or do we wish to ascertain if these candidates are so trained that they will only not do harm but intelligently do good? If the former is sought the present system is admirably adapted to this end, if the latter, it is an acknowledged and absurd failure. There is not a physician to-day who, unless he has pursued surgery or held the position of teacher of anatomy, does not acknowledge that he could not pass an examination upon this subject. The same is true of physiology, chemistry, physics, materia medica, and histology. Why then should not these subjects be passed off at an earlier examination of the Regents instead of allowing them to rob of their legitimate time those more vital subjects of medicine, surgery, obstetrics, gynecology, pathology, and therapeutics? There should, for example, be three or even six examinations instead of one, failure to pass any one of which should debar the candidate from taking the next. In this way the standard could be raised and each subject could be soberly and adequately treated, and there would be acquired such fundamental knowledge that though the detail of the subject may have been forgotten, yet the foundation upon which the details could be readily built would remain. These examinations could be distributed throughout the four years of the medical course.

This is none other than the conjoint system of the Royal Conjoint Examining Board of England, and while we may hesitate to adopt many medical methods of our English brethren, yet in matters of education we must acknowledge that they have solved the problem.

Thus, with the proper medical training before beginning the study of medicine and four thoughtful studious years, interspersed with rigid examinations on a reasonable number of subjects at a time, the graduate would go into the medical world feeling not that he had run a gauntlet the doing of which he could not explain, but that every step of the way has been thoroughly and intelligently taken, and that he is able to compete with the graduates of any institution in the world.

C. N. B. CAMAC, M.D.

NEW YORK CITY, January 31, 1899.

OUR PHILADELPHIA LETTER.

[From Our Special Correspondent.]

THE DISGRACEFUL CONDITION OF OUR STREETS—THE AFTERMATH OF THE BLIZZARD—HEALTH-BOARD RESTRICTIONS AS TO MEASLES—PROFESSOR STEPHENS CONVICTED OF ARSON—HOMEOPATHIC SOCIETY MEETING—FIFTIETH ANNIVERSARY OF ST. JOSEPH'S HOSPITAL—PERSONAL NOTES—HEALTH STATISTICS.

PHILADELPHIA, February 21, 1899.

THE newspapers have been teeming with communications relative to the disgraceful condition of our streets which, as a result of the storm, are covered with filth, mud, slush, and heaps of half-melted snow. The Citizens' Municipal Association has entered a formal protest against the signing of contractors' warrants whose business it is to keep the streets clean and a number of business men have formed a committee to lay before the

mayor the matter of this neglect. While the officials claim to be doing all that it is possible to do the seas of mud and slush do not seem to diminish, and it is the same old story of derelict duty and official indifference. Drs. S. Solis-Cohen, Judson Daland, and many other physicians have called attention to the dangers incident to such conditions as prevail, but as usual the warning is unheeded and perhaps the solution of many of our municipal problems, so far as they relate to public health will be found some day after a huge epidemic has awakened us from our stolid indifference and then the day of reckoning for our corrupt and dishonest officials will be a mighty one. The aftermath of the storm with its melting snow and slush, causing sewers to overflow and "backwater," is greatly to be feared, and despite the fact that the health board has again issued notices to boil all drinking-water we may look for a further increase in the number of cases of typhoid.

During the storm the police and fire departments accomplished wonders and many who would otherwise have starved or frozen to death were cared for by the men of these departments. Milk was practically the only food which it was impossible to obtain and for twenty-four hours many suffered from lack of it. The modified milk laboratory was unable to supply its baby customers for thirty-six hours.

The Sanitary Committee, to whom the Board of Health referred the matter, has not yet reached any decision in regard to Dr. Lee's suggestion that measles be included with scarlet fever and other infectious diseases in regard to control by the Board. Dr. Lee reported to the Board that while 114 deaths from scarlet fever were reported last year, there were 234 from measles, and he strongly urged the inclusion of measles in the list of contagious diseases, and especially as serious and permanent sequelæ are so common after the infection.

George H. Stephens, at one time a professor in Lafayette College at Easton, was declared guilty of arson on last Saturday. It will be remembered that he was accused of having set fire to Pardee Hall in December, 1897, when the building was entirely destroyed, causing a loss of about \$200,000 to Lafayette College. The burning was done as an act of revenge for fancied wrongs he had suffered at the hands of Dr. Warfield, president of the college, and the plea was made by his friends that his mind was unbalanced. This failed to save him, however, and his conviction later became a matter of course.

The Homeopathic Medical Society of Philadelphia held its February meeting at the Lafayette Hotel, Monday evening, the 20th. A paper was read by Dr. W. G. Steele as to the methods best suited to improve the system, which was discussed by several of the members.

The fiftieth anniversary of the founding of St. Joseph's Hospital will be celebrated with special religious services, and a special contribution on Washington's Birthday. The number of cases treated in the out-patient departments, as well as in the wards, has increased enormously during the past five years at the rate of nearly 1000 cases a year.

Dr. Jacob M. Da Costa, Emeritus Professor of Practice of Medicine at Jefferson Medical College, has been elected a member of the Board of Trustees of the University of Pennsylvania.

The total number of deaths occurring in Philadelphia during the week ending February 18th, as reported at the Health Office, was 527, which is a decrease of 42 from last week, but an increase of 78 over the corresponding period of last year. Of this number 161 occurred among children under five years of age. The total number of new cases of contagious diseases was 351, reported as follows: Diphtheria, 51 cases with 10 deaths; scarlet fever, 13 cases with 1 death; typhoid fever, 287 cases with 38 deaths.

OUR LONDON LETTER.

[From Our Special Correspondent.]

ASININITY OF THE GENERAL MEDICAL COUNCIL—
DIVERSITY OF MEDICAL DEGREES IN GREAT BRITAIN
—DEATH OF THE NOTED PATHOLOGIST, JOSEPH
COATS—LONDON'S PROPOSED NEW WATER-SUPPLY
—TO SUPPRESS STREET NOISES.

LONDON, February 11, 1899.

THE medical *cause célèbre* of last week was the verdict of the Queen's Bench in the case of Hunter *vs.* Clare appealed. It will probably be remembered that some months ago the Penal Committee of the General Medical Council brought an action against a Mr. H. K. Hunter for using professional titles which did not legally belong to him. There seems to have been an extraordinary amount of confusion not to say muddle-headedness in the minds of this cumbrous and secret-session star-chamber council as to just what Mr. Hunter was guilty of. At least two members of the council have publicly stated in a special letter to the journals that they were assured that he was an unregistered practitioner practising under that flimsiest of all qualifications, an American degree, and was to be prosecuted accordingly. The mouse which was actually born of the ridiculous mountain, however, was an action accusing him of the awful crime of using the title "physician" upon his door-plate, when he was only an L. S. A. (Licentiate of the Society of Apothecaries) and another *separate one* alleging a similar misuse of the sacred name "surgeon." The judge found him guilty upon the first count and fined him \$25, whereupon the second was politely dropped. The Society of Apothecaries righteously indignant appealed the case. The appeal has just been heard and the decision of the lower court as to the question of right affirmed, but the fine cancelled on the ground that Mr. Hunter had used the title innocently and in good faith, believing he had a right to it.

And all this disgraceful fuss over a door-plate! Mr. Hunter was a registered practitioner, fully qualified, and nothing whatever was even suggested against his competence or his honesty. Worst of all, as if to bring the pettiness and meanness of the official mind into full relief, the poor gentleman died just after the verdict had been given against him, with the gratuitous slander of the Penal Committee still resting upon him. Altogether the pro-

fession is thoroughly ashamed of the part it has been made to play in the matter and indignant with the committee for the public disgrace it has brought upon the body which it misrepresents. The episode will add greatly to the already strong feeling of dissatisfaction with both the make-up and the methods of the General Medical Council.

Such ridiculous proceedings could of course only have occurred under the antiquated and intolerably complicated system of medical qualifications in vogue here. There are no less than *nine* different degrees or qualifications which entitle a man to practise medicine in England. Three different "Licentiate of the Royal College of Physicians" (L.R.C.P.) of London, Edinburgh, and Dublin; the same three kinds of membership in the Royal College of Surgeons (M.R.C.S.; M.R.C.S.E.; M.R.C.S.I.) making six in all, then M.B., M.D. and L.S.A. Of all these only M.D. entitles its possessor to the prefix "Dr.," although by courtesy this is extended to Members and Fellows of the College of Physicians, and the last one does not even entitle its owner to style himself "physician and surgeon." What wonder that even the conservative *British Medical Journal* is urging the advisability of a uniform or even simple degree.

The Home Secretary has declined to grant the petition signed by 6000 of the Peculiar People, asking him to modify the sentence of Senior, who was condemned to three-months' imprisonment for allowing his child to die of bronchitis without calling a physician.

The Prince of Wales has announced his intention of being present at the delivery of the Hunterian oration this year at the Royal College of Surgeons and will dine at the College in the evening. The oration is to be delivered by the President of the College, Sir William MacCormac, who attended the Prince after his recent fracture of the patella, and H. R. H.'s presence at the function is interpreted as a graceful expression of his gratitude to both Sir William and the medical profession.

English pathology lost another of its standard-bearers last week, scarcely more than six weeks after the untimely death of Kanthack. Joseph Coats, Professor of Pathology in the University of Glasgow, and well known for his original and valuable work, died at his home in the North after an illness extending over nearly three years. He was fifty-two years old and had devoted his entire medical life to pathology, but had only been pathologist in the University for eight years.

The admirable new scheme of an adequate water-supply for London, from the mountains of Wales, is being pushed vigorously by the County Council. Vitally important for the public health as the change is acknowledged to be on all hands, the present water companies are fighting it tooth and nail, even stooping to such ludicrously contemptible methods as sending a swarm of agents into the districts which are likely to be bought up for water-basins to stir up the farmers and peasantry against the scheme and rake up cases of defect or mistake in the notices issued to landowners by the County Council. In this the notorious multiplicity of the John Joneses, the Evan Evanses, and the Ap Morgans in Taffylund

has aided them greatly and the council has had several notices of illegal procedure brought against it on the trifling ground that its original papers were served upon the wrong Owen Owens. The "Water-Lords" have also brought scores of the farmers up to London to protest before the County Council, but as the eagle-eyed reporters have discovered that they are being entertained royally and given passes to the theaters, etc., their formal "opposition" excites more laughter than anything else. In fact the ridiculous scheme has recoiled on its inventors and the latter have not hindered the great sanitary reform in the slightest by their selfish and contemptible maneuvers.

From various quarters in London are coming urgent demands for the physical inspection at regular and frequent intervals of the children in public schools by a physician. This is demanded both as a safeguard against infection, parasites, etc., and also as a means of detecting defects of sight or hearing and of deciding whether children are in proper physical condition for their work. In a few school districts medical men have volunteered their services to the School Board and the results have been so good already that there is a demand for the appointment of regular school-physicians. In Belgium the children are rapidly but carefully inspected every ten days and the system works admirably. Here is another opening for our overcrowded profession.

The *Spectator* and several other papers are having an animated discussion as to whether "catching cold" is not really an infection and the wise men among the laity are rushing into the fray with great enthusiasm. The infectionists have rather the best of it so far, as they can cite the complete freedom from "colds" of Nansen's party in the Polar ice and their prompt epidemic of coryza on return to civilization and the curious "strangers' cold" at St. Kitts which sets half the inhabitants to sneezing every time a ship touches at the port and for weeks afterward. Moreover, as one of them acutely points out "colds" are almost invariably caught in churches, theaters, railway carriages, etc., where bad air and microbes abound and seldom in the open country or when camping out.

The London Society for the Suppression of Street Nuisances held its annual meeting last week and its principal onslaught was directed against the horrible noises which make the streets a Bedlam. The church bells, the muffin bell, the cries of hawkers, and above all the organ as she is ground were inveighed against and it was darkly intimated that this fiendish concatenation of sounds was what was really driving the workingman to drink. Fully half the noise in the city streets is idiotically unnecessary and should be stopped in the interests of both comfort and health. The dawning of a better day is already in sight for a woman in East Westminster has just been fined under the new Public Nuisances Act for keeping a crowing cockerel which would disturb the neighbors in their beauty sleep. If only the midnight cat can be brought within the operation of the Act we may hope to rest in peace.

The use of "dust destructors" on the furnace plan is spreading rapidly in England. Many of the provincial

towns have them in successful operation and several of the London districts as well. They consume street sweepings, factory refuse, house and stable litter, everything in fact that is too solid or bulky to go down the sewers. In one London destructor not only is the dust and refuse destroyed and the smoke therefrom consumed but enough heat generated to run the parish dynamo for electric-lighting. We have got past "dust to dust" and "dust to electric light" seems the revised version.

The *British Medical Journal* recently published a letter from a medical missionary in China, in which he states that the infamous custom of compressing ladies' feet is frequently productive of necrosis of the metatarsals, ulcers and fistula. He has treated a number of these women by removal of sequestra, curetting, and packing with gauze.

TRANSACTIONS OF FOREIGN SOCIETIES.

British.

BLACK-WATER FEVER—RECOVERING FROM A BROKEN NECK—ON THE CHOICE OF ANESTHETICS—FOUR INTERESTING CASES OF PERFORATION OF A ROUND ULCER—AN INSTRUMENT FOR CRUSHING AND WASHING OUT GALL-STONES—TREATMENT OF STRICTURE OF THE ESOPHAGUS FROM BELOW UPWARD—SUDDEN DEATH AFTER PARTURITION—AORTIC ANEURISM DOES NOT CAUSE HYPERTROPHY OF THE HEART—NATURAL RESULT OF ADHESIONS OF SEROUS SURFACES.

At the Pathological Society of London, December 20th, CROSSE and PACKES reported a case of black-water fever which occurred in a young officer who had served fourteen months in Nigeria. The attack began apparently as an ordinary attack of malaria, but after two days the symptoms of black-water fever appeared. There were pyrexia, jaundice, green vomit, and hemoglobinuria, and a slight amount of albumin in the urine. The blood contained hematzoa of the estivo-autumnal type. The patient improved after the administration of quinin but had a relapse a few days later. The quinin was increased in quantity and the relapse was quickly recovered from. As the symptoms of black-water fever came on in this patient six hours before he received quinin the theory that black-water fever can be caused by quinin must be laid aside. Two other theories are possible: One is that the disease has no connection with malaria, and the other is that the disease is a complication of tropical malaria. If the first alternative is true it must be admitted that the disease can develop in England or can have a latent period of more than four weeks as the patient had left Africa more than a month before his symptoms developed. The speakers were inclined to regard black-water fever as a complication of malaria since it attacks only those persons who have had malaria in a tropical climate.

At the session of January 17th POTTER showed the cervical vertebrae of a man who died of old age at the age of eighty-two years. The interesting point was that he had received a blow from a falling wall twenty years previously. His head was forcibly flexed on his chest and he was unconscious for two days. There was loss of

power of the right arm and leg. He was kept in bed with his head fixed for four months and ultimately recovered entirely, though there always remained a prominence at the back of the neck and the chin almost touched the sternum. Section of the spine showed that the cervical vertebrae had been crushed together, and the second, third, and fourth were at right angles to the lower three. Compression of the bodies of the vertebrae seemed to have saved the cord from stretching.

At the Society of Anesthetists, December 16th, WHITE discussed the choice of an anesthetic. Upon etherized patients reflex shock due to the operation does not appear. This is not true of chloroform. Prolonging an operation under an anesthetic is to be deprecated. While children and the aged take chloroform better than the adult, still children sometimes succumb to it. Ether, if carefully given, is well borne by children. He regarded advanced age, independent of lung disease, as no insuperable objection to ether. In chronic lung troubles he used ether if possible, but chloroform for acute pulmonary troubles. In cardiac disease, save in aneurisms, ether was his choice. In abdominal surgery he used ether, giving it very lightly. In brain surgery he preferred chloroform with or without morphin. For operations about the mouth he commenced with gas or ether to stimulate and alleviate shock and then changed to chloroform.

SILK agreed with some of the points of the speaker but advocated the A. C. E. mixture for operations upon children between the ages of three and twelve, and for adults over sixty; also in very stout persons or those affected with chronic pulmonary or renal troubles. He also used this mixture in operations upon the head and neck.

At the Glasgow Medico-Chirurgical Society, December 16th, STEVEN showed specimens from two cases of perforating ulcer, one of the duodenum and the other of the stomach. Both patients were young women who were attacked, while engaged in their duties, with intense epigastric pain. The former died in collapse in twenty-four hours; but the latter rallied the first day, and went about her work, but a second attack of pain occurred one day after the first one, and in forty-eight hours she was dead. There was general peritonitis in both cases. Steven thought that the first attack of pain in the latter patient was due to a partial rupture of the ulcer, the second attack to its complete perforation.

RUTHERFORD mentioned a case of perforating ulcer in the stomach in a girl, aged twenty-five, in which the diagnosis was promptly made and the ulcer sutured within eight hours of the attack of pain. The patient did well for a time, but died three weeks later of general peritonitis. There were many old adhesions, and at the autopsy there was found a second ulcer in the posterior wall of the stomach, which had also perforated.

At the Birmingham Branch of the British Medical Association, November 25th, SHORT showed the stomach of a girl, aged sixteen, who was first seen fourteen days after an attack of epigastric pain and vomiting. She had had pain after meals for a year previous, but had never vomited blood. The physical signs pointed to air and

fluid beneath the diaphragm. On draining the cavity through the ninth space in the posterior axillary line fetid pus was evacuated. She did very well for some three months, but the temperature was never satisfactory. At the end of this time she suddenly developed acute pleuropneumonia of the right side and died in a few days. At the necropsy some curdy pus was found in the crevices between the stomach, liver, and diaphragm; otherwise the abscess cavity was healed, and the ulcer closed by firm adhesions to the spleen.

At the meeting of December 8th TAIT showed an instrument which he had repeatedly used with success in breaking up concretions left in the ducts after cholecystotomy. He found that wherever a stone had traveled this instrument would follow without risk. It consisted of a small scoop, out of the end of which was cut a notch so that an instrument after the fashion of a double-quill drill was formed. The addition of a tubular handle through which a stream of water was forced greatly assisted in the removal of the *débris*. The success met with by Mr. Barling and others in freely laying open the ducts and removing the stones entire was alike gratifying and surprising, but, for his own part, he would feel safer in leaving the ducts intact.

BARLING showed a patient, aged two years, who had swallowed sulphuric acid and acquired a stricture of the esophagus. Frequent attempts were made during the next two months to pass bougies through the stricture, but they all failed, even under an anesthetic. The stomach was, therefore, opened, and a fine bougie was passed from below upward, and a string was drawn through. By means of this string the stricture was sawed until it would admit a No. 13 bougie. This was left *in situ*, one end being brought out of the mouth. The incisions in the stomach and abdominal wall were both closed. The after treatment consisted in the daily passage of a No. 16 bougie. There was still a great tendency to contraction, but the child was improving in general health and able to take solid food of all sorts.

At the Liverpool Medical Institution, December 15th, CAMPBELL reported a sudden death occurring twelve days after parturition. The patient was a primipara, aged forty. The perineum was torn and sutured, and it healed by first intention. There was insomnia for four days. The temperature never exceeded 100° F. On the seventh day there was slight twitching of the muscles of the face and limbs, followed by a brief period of unconsciousness. On the twelfth day the patient died suddenly while taking a cup of tea. The only pathological condition found at autopsy was a thrombosis of the basilar artery. Many cases of sudden death ten to fourteen days after labor have been without autopsy ascribed to pulmonary thrombus.

At a meeting of the Royal Medical and Chirurgical Society, January 10th, CALVERT read a paper on "Aortic Aneurism as a Cause of Hypertrophy of the Left Ventricle." A search through the records of St. Bartholomew's Hospital for the last thirty years showed that autopsies had been performed upon 124 subjects who had aneurism of the arch of the aorta. In 68 cases there

was no hypertrophy of the left ventricle, while the hypertrophy could be perfectly explained by other causes in 47 of the remaining cases, and could probably be so explained in the remaining 9 others. There was, therefore, no evidence in these pathologic records that aneurism of the aorta causes hypertrophy of the left ventricle.

LAZARUS BARLOW said that the records of St. George's Hospital for the past two years bear out Calvert's statement. In eight out of thirteen cases of aneurism of the ascending or transverse arch of the aorta, it was expressly stated that no hypertrophy was present. In the remaining five cases the hypertrophy was accounted for by aortic regurgitation or granular kidney.

At the Harveian Society of London, January 5th, MARSH read a paper on the "Subsequent History of Cases in Which Adhesions Have Formed in the Joints, Peritoneal Cavity, and Elsewhere." Adhesions, if not too extensive, tend to become absorbed. He mentioned a typical case of a middle-aged woman who, after peri-uterine inflammation, suffered so much pain that an exploratory laparotomy was performed. The intestinal coils were firmly matted together, and nothing was attempted. Two years later the abdomen was again opened in order to remove an ovarian cyst. It was observed that almost every trace of adhesions had passed away. The natural tendency to the absorption of adhesions gives the key to the treatment of many joints. Cases of adhesion in joints should be divided into three classes: In the first group are placed those cases of adhesions due to an inflammation neither severe nor prolonged. Such adhesions soon disappear spontaneously. If the inflammation has been more severe or prolonged the adhesions are so extensive and firm that they will not disappear of themselves. The treatment should be to break up the adhesions under an anesthetic, and to follow this with passive motion and massage. In the third group are the cases in which long acute inflammation has destroyed the joint surfaces, and the joint is practically converted into a scar. To break up the scar tissue is useless, as it will simply form again. In the great majority of tuberculous cases, at whatever stage, manipulation is not advisable, nor even safe.

MANDERS remarked that the cases of light inflammation which Marsh had spoken of were really not inflammatory at all, but simply instances of traumatism. Adhesive inflammation due to microbic infection is a totally different condition, in which attempts at manipulation always fail. He explained this on the theory that the toxins dissolved the endothelium of the joint.

For Fetid Breath. — BAYER thinks that chronic nasopharyngeal affections are the principal etiologic factors in this condition. In women who suffer from it at their menstrual periods congestion and increased secretion of the nasopharynx can be demonstrated. The trachea is usually affected as well. When the diagnosis is made secure by examination, Bayer recommends intratracheal injections of carbonate of creosote, using 8 to 16 minims of a fifty-per-cent. solution, slightly warmed, in an intralaryngeal syringe. There is no irritation produced, and the result gained is most satisfactory.

SOCIETY PROCEEDINGS.

THE NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, Held Thursday Evening, February 2, 1899.

THE President of the Academy, DR. WILLIAM H. THOMSON, in the Chair.

The paper of the evening was read by DR. LOUIS LIVINGSTON SEAMAN, Surgeon-Major of the United States Volunteer Engineers, and its subject was

THE UNITED STATES ARMY RATION AND ITS ADAPTABILITY FOR USE IN TROPICAL CLIMATES.

Dr. Seaman considers that the matter of diet for our army in the new conditions which recent events have created for it is one of the first and most important things to be thought of. English reports of the difficulties encountered by their armies in tropical climates declare that the ill health of the soldier is due to three factors—unsuitable eating, drinking, and clothing. Some even claim that the effect of the climate itself is secondary to these. We are about to enter on a period when United States soldiers may be called upon to serve under the greatest extremes of climate. Take for instance, the most recent weather reports obtainable as to the state of the temperature in various parts of our domain in these last few days. In Alaska 50° below zero, in Santiago 80° above, in Manila 90°, in Havana 104° above zero. It is evident that a very different provision for diet and clothing is necessary in these various places with a temperature difference amounting to 154°. If two ships are being fitted out, one for an equatorial, the other for an Arctic voyage, it is evident that they must be provisioned and provided for in other ways quite differently, yet the law directs that the army serving under these different climatic conditions should have the same rations. Physiologically, we know that a diet full of nitrogen is proper for the North, but will be overheating and irritative at the South.

The United States army daily ration is as follows: Fresh beef 20 oz., or salt beef 22 oz., or bacon, or pork 12 oz.; bread 18 oz., potatoes 16 oz., peas, or beans 2.40 oz., or tomatoes 5 oz.; rice 1.60 oz., sugar 2.50 oz., coffee 1.60 oz., and salt 1.25 oz. It is clear that the ration thus outlined is entirely unsuitable for tropical climates. Much more vegetables and much less meat are required. There is in hot climates very little craving for meat. Nature in each zone supplies the products which are most suitable for animal consumption in the special region. At the frozen north where heat-supplying food is the main need, there are no vegetables to speak of, and the animals are clothed by Nature with a covering of fat that makes their meat, when used as food, especially calculated to produce heat. In the tropics Nature supplies an abundance of vegetables and fruit that are satisfactorily nutritive, but are not heating, while in the temperate zone there is the proper mixture of these dietetic elements that is suitable for the midway character of the climate, and its calls for heat-producing materials. Nature has even provided in the different seasons in the temperate

zones the food most suitable for each one. Young green vegetables in the spring time when much heat is not needed as an adjunct to the animal diet of the winter time, vegetables and fruits in abundance in the summer and autumn when nutrition but not heat is most needed by the system; while she provides an exclusively animal diet in the winter time.

The British have realized this in India, and have supplied the common soldier with one-fourth less meat and one-fourth more vegetables when serving under the Indian sun. Tommy Atkins is the greatest meat-eater in the world, but he has taken kindly to the change realizing that it is for his good. Even with this reduced amount of meat, however, army inspectors declare that too much meat is consumed for the health of the soldier in India.

Our own trouble in the tropics at Santiago and in Puerto Rico, during the late campaign, was not any lack of food in quantity, though the emaciated appearance of our soldiers on their return led to many false stories to this effect, but was due to a mistake in the quality of the food furnished us. More than one-half the regiment was under the weather in a week with symptoms of gastrointestinal irritation. To the intense relaxation produced by the hot moist climate, there was added the constant irritation of an extremely unsuitable diet,—fat salt meat, tinned beans and tomatoes that had begun to ferment. Resistive vitality was lowered, hyperemia, and incipient inflammatory conditions of the intestinal mucosa set up by irritation, and the intestine prepared for the successful invasion of pathogenic micro-organisms. It is probable that with the body juices in normal condition and the intestines not so predisposed to infection by irritation most of the soldiers would have escaped the typhoid epidemic, despite the almost universal prevalence of its specific bacillus. Could there have been a change of rations when the irritative intestinal conditions were first observed most of the after sickness would have been avoided. As it was we owed whatever alleviation we had in this matter to the thoughtful munificence of private individuals who, for two months, supplied us with fresh milk, and to the generous supplies of the Red-Cross people that proved a veritable blessing.

There was no lack of drugs, though this has often been said in the newspapers, at least, none that I saw. What was needed was not drugs but diet. Hospitals got best results that were able to give an absolute milk diet as I have shown in an open letter in this month's *Century*. Besides this dietary treatment one other thing would have saved life, the preparation of the soldier for his experience in the tropics by a diet, for some time before, suitable for the climate he would have to endure.

There was a striking similarity, clinically, about all the cases of intestinal disease, and the autopsy revealed a striking uniformity of lesions. A congested liver, a hyperemic intestinal mucosa, covered with a pale tenacious mucus, and congested Peyer's patches that were often prominent and inflamed looking. Nothing specific, however, above all no ulcerative lesions of Peyer's patches pointing to typhoid. This confirmed the clinical diagno-

sis and the negative Widal reaction in these cases. We were almost as much at a loss for the immediate cause of death after the autopsy as before it. We seemed to be in the presence of a new undescribed form of intestinal disease. The etiology of it was not some new microbe with a long scientific name, but a salt-fat-meat-pork-hard-tack-dried-bean-diet in a tropical climate.

Salt-meat rations are, in English experience, extremely liable to cause intestinal trouble. In the first Burmese War one-half of the soldiers who made the campaign fell victims. In other parts of the Indian service as many as 700 out of 900 have been known to be on the sick-list as the result of unsuitable diet. Not only salt meat but an excess of fresh meat will have the same result. Laveran tells us that in Northern Africa attacks of intestinal trouble among the men could often be connected with stolen mutton.

It is plain then that the present United States Army ration must be modified to be made suitable for our men when on service in the tropics. Even the non-meat portions of it are unsuitable. The canned and dried beans are objectionable because they so easily cause irritative fermentation processes in the intestine in hot weather. Nearly every issue of them was followed at Santiago by a marked increase of diarrhea. It was very different with the small dark native bean, the *frijole*, which proved easily digestible. Canned tomatoes were also unsuitable, and they do not replace as they are claimed to do the fresh tomatoes, which are besides plentiful and easily obtained.

The requisites of an army ration are that it should be non-irritating and easily digestible and then should be easily portable. These conditions the present ration does not fulfil. The new ration should be more flexible than the present one seems to be. At present there is too much meat allowed. We are far ahead of other countries as to the meat ration allowed our soldiers. The German soldier, the best trained fighting machine in the world, gets but $5\frac{1}{2}$ oz. of fresh meat, or $4\frac{1}{2}$ oz. of salt meat daily, but makes up for it by getting 79 oz. of vegetables. He gets only one-fourth as much meat, but more than double the amount of vegetables supplied to our soldiers. The Russian soldier gets 7 oz. of meat and 48 oz. of vegetables. The Italian, 7 oz. of meat and 37 oz. of vegetables. The Belgian, 8 oz. of meat and 61 oz. of vegetables. It is evident then that a change must come in the direction of reduction in the meat supplied and increase of the vegetables.

The beef and salt meat might, with advantage, be cut down one-half and farinaceous foods added to supply their places. The meat should be procured fresh from local sources, or if it has to be shipped should be shipped un-killed. This is not a difficult matter, and there is no other way to save loss and prevent illness from the consumption of a tainted meat, since refrigerator beef spoils with extreme rapidity as soon as removed from cold-storage in the tropics. Cereals should be added to the diet, especially hominy, and the present allowance of rice should be at least quadrupled. The hardy Japanese soldiers live almost exclusively on rice. The Greeks were

magnificent soldiers and yet lived to a large extent on lentil soup. The spirit of Leonidas' little band of Spartans despite this meager diet shows that valor is not solely a function of commissary beef. One very important matter besides the diet is its preparation. No food, however good or suitable but can be spoiled in the cooking. The Lord made good food and the devil made bad cooks. Inefficient incompetent cooks were responsible for a good deal of sickness. The Government should establish schools for camp cooks. No measure would do more for our army in the tropics than this.

I have gone into this subject somewhat in detail because the last report of the army inspectors says there is no improvement in the United States Army ration that can be suggested as the result of recent experience. I venture to think that certain things need to be improved, and that the method of the improvement is not far to seek.

DISCUSSION.

MAJOR J. M. G. WOODBURY said he thought that Major Seaman had the very right end of a very good stick, and was perfectly justified in using it as he did. He had not overestimated the causes he deemed he saw at work, and he was not rash in stating his conclusions. It is perfectly clear that our present ration will not do in the tropics. The suggestions as to hominy, rice, and vegetables are excellent, and are thoroughly in accordance with the results of his own observations, and these articles may be transported practically as easily as those now supplied.

As to the cooking, very often in our late war it was unspeakably bad, and even that wonderfully accommodative subject, the United States Army Volunteer, was unequal to it. Major Woodbury then described very humorously some of his experiences in performing his duty as inspector, and especially in the cooks' department. Among the regulars in the cooks' realm he found everything in excellent order, tins clean and scoured, materials well protected from dampness and insects, and a suitable place for everything. Among the volunteers, as a rule, he found everything just the opposite. Accumulations of grease on the inside of vessels, soot on the outside, flour allowed to become damp and ferment, vegetables unprotected from flies and insects, and very little attempt at order. Uncleanliness in the cooks' department was responsible for a large share in the difference of morbidity among the regulars and the volunteers. This was an important item since, under his own observation, while but twelve per cent. of the regulars were sick from twenty-five to thirty per cent. of the volunteers were laid up.

COLONEL WOODRUFF said that with much of Major Seaman's address he was in accord. The difficulty was not, however, with the ration. The United States Army ration was not as had been claimed an iron rule admitting of no exceptions, least of all did it consist of only the list that had been discussed this evening. There were a hundred things nearly that might be drawn by commanders, as alternates for the articles mentioned. The list as given was only meant to be a general guide

as to the things usually required, and the amount of money allowed by the Government to be spent daily for each soldier. To those who knew its possibilities the United States Army ration was most flexible. This was why the decision had been made that there was no suggestion to offer for its improvement. Experience would show that it was sufficiently flexible even to be made suitable for troops in the tropics.

MAJOR KILLBOURK said that army men had been treated to so little of the army ration in Cuba and so much of it in the daily papers since their return, that their feelings were in quite a whirl. The trouble in Cuba was not quality of food but quantity, *i.e.*, insufficiency of food and that not due to the fact that insufficient food was supplied by the Government, but that transportation could not be secured to bring it to the men. As to all diet the great question is its adaptability to the individual and the individual's personal equation as to foods. He had seen a soldier dying of inanition, though liberally supplied with the hospital's best, appeal for corn-pone to which he had been accustomed at home and proceed to get well on it.

MAJOR BELL said that they lived not on but in spite of their rations at Santiago. Some of the material furnished was most unsuitable. Green coffee was distributed on the fighting-line at San Juan Hill. As a rule too much coffee was drunk. His men were not sick till the rainy season had set in. Some of them craved bacon and salt meat. After the distribution of rations of fresh meat many of them improved. There was a craving for sweets and for rice and hominy that should and could have been satisfied rather easily. Molasses should form a part of the ration at all times.

MAJOR JARVIS said that the Anglo-Saxon was not made for the tropics. He would need a new alimentary canal for that. Farinaceous foods instead of meat did not comprise the answer to the problem. The cellulose in them was irritating. The customs of life among the people made the rations of other countries different from ours. As to our soldiers they demanded meat and all the habits of a lifetime made them crave it, and they must have it. The English have learned the lesson after generations of experience and they are arming their colonists. This is the real solution of the question of keeping an army in the tropics.

Owing to the lateness of the hour Major Seaman in summing up said only that he hoped that the perfectly free discussion of the evening would carry its due weight and that some of the things said might be practically suggestive to those who had the matter in hand.

THERAPEUTIC HINTS.

For Hysteria.

℞	Ac. arseniosi	.	.	.	.	gr. ss
	Ferri sulphatis	} aa	.	.	.	gr. xx
	Ext. sumbul		.	.	.	
	Asafoetidæ	.	.	.	.	gr. xl.

M. Ft. pil. No. XX. One pill three times a day after meals.

Treatment of Lupus Vulgaris. — UNNA has found the most efficient application for this affection to be butter of antimony, and that its action can be better localized by the simultaneous use of creosote and salicylic acid.

℞	Antimonii chloridi	} aa	.	.	.	3 ss
	Acidi salicylici		.	.	.	
	Creosoti	} aa	.	.	.	3 i
	Ext. cannabis indicæ		.	.	.	
	Lanolini	.	.	.	.	3 ii.

M. Sig. External use.

In order to prevent pain from the immediate action of the caustic Unna employs cocain mixed with an inert substance as follows:

℞	Cocain hydrochlorat.	.	.	.	gr. viii-xvi
	Magnesi carb.	.	.	.	3 iiss.

M. Sig. Powder the part, then cover with a layer of moist absorbent cotton, and retain in place fifteen to twenty minutes, using light pressure.

After cocainizing, place a thin coat of the caustic salve on the affected area, and cover with zinc-oxid plaster. The application is renewed after twenty-four to forty-eight hours, according to the amount of secretion. The nodules disappear rapidly, while healthy granulations form.

Treatment of Ulcerative Stomatitis. — TORDENS finds nothing so effective as chlorate of potash internally, which he prescribes as follows:

℞	Potassii chloratis	.	.	.	gr. xv-xxx
	Syr. aurantii	.	.	.	3 iiss
	Decoct. cinchonæ	.	.	q. s. ad.	3 ii.

M. Sig. Two teaspoonfuls every two hours.

He recommends, further, a mouth wash of boric acid or sodium benzoate solution, or swabbing with a solution of zinc sulphate, or potassium permanganate, the latter rendering good service in the strength of 1-1000, applied several times a day on absorbent cotton.

Good general hygienic conditions are of course necessary; the food (liquid) should contain albumen and be given cold, as iced milk or cold bouillon, in order to diminish heat and pain in the mouth.

For Exophthalmic Goiter. — DIEULAFOY employs ipecac in most cases as a remedy for the vascular erythism.

℞	Pulv. ipecac.	.	.	.	gr. xxx
	Pulv. digitalis fol.	.	.	.	gr. xv
	Ext. opii	.	.	.	gr. iv.

M. Ft. pil. No. L. Sig. Two to four pills a day.

The ipecac is never to be pushed to the extent of causing vomiting, but slight nausea is allowable. It is to be continued for at least several months. Valerianate of ammonia may often be given with good effect, and hydrotherapy is recommended for an indefinite period.

For Lead Colic. — Prescribe 10 grains of potassium iodid to be taken three times a day, followed by a tablespoonful of the mixture here given, according to Brunton.

℞	Magnesi sulphat.	.	.	.	3 i
	Ac. sulphur. dil.	.	.	.	3 i.
	Aq. dest.	.	.	.	3 iv.

M. Sig. One tablespoonful three times a day.